Observations of Seawater Temperature and Salinity at British Columbia Shore Stations, 1982

L. F. Giovando

Institute of Ocean Sciences
Department of Fisheries and Oceans
Sidney, B.C. V8L 4B2

1984

Canadian Data Report of Hydrography and Ocean Sciences No. 25

Canada

85-1919/

Canadian Data Report Of Hydrography and Ocean Sciences

These reports provide a medium for the documentation and dissemination of data in a form directly useable by the scientific and engineering communities.

Generally, the reports will contain raw and/or analyzed data but will not contain interpretations of the data. Such compilations will commonly have been prepared in support of work related to the programs and interests of the Ocean Science and Surveys (OSS) sector of the Department of Fisheries and Oceans.

Data Reports are produced regionally but are numbered and indexed nationally. Requests for individual reports will be fulfilled by the issuing establishment listed on the front cover and title page. Out of stock reports will be supplied for a fee by commercial agents.

Regional and headquarters establishments of Ocean Science and Surveys ceased publication of their various report series as of December 1981. A complete listing of these publications and the last number issued under each title are published in the *Canadian Journal of Fisheries and Aquatic Sciences*, Volume 38: Index to Publications 1981. The current series began with Report Number 1 in January 1982.

Rapport statistique canadien sur l'hydrographie et les sciences océaniques

Ces rapports servent de véhicule pour la compilation et la diffusion des données sous une forme directement utilisable par les scientifiques et les techniciens.

En général, les rapports contiennent des données brutes ou analysées mais ne fournissent pas d'interprétations des données. Ces compilations sont préparées le plus souvent à l'appui de travaux reliés aux programmes et intérêts du service des Sciences et Levés océaniques (SLO) du ministère des Pêches et des Océans.

Les rapports statistiques sont produits à l'échelon régional mais sont numérotés et placés dans l'index à l'échelon national. Les demandes de rapports seront satisfaites par l'établissement auteur dont le nom figure sur la couverture et la page de titre. Les rapports épuisés seront fournis contre rétribution par des agents commerciaux.

Les établissements des Sciences et Levés océaniques dans les régions et à l'administration centrale ont cessé de publier leurs diverses séries de rapports depuis décembre 1981. Vous trouverez dans l'index des publications du volume 38 du *Journal canadien des sciences halieutiques et aquatiques*, la liste de ces publications ainsi que le dernier numéro paru dans chaque catégorie. La nouvelle série a commencé avec la publication du Rapport n° 1 en janvier 1982.

Canadian Data Report of Hydrography and Ocean Sciences No. 25

1984

OBSERVATIONS OF SEAWATER TEMPERATURE AND SALINITY AT BRITISH COLUMBIA SHORE STATIONS, 1982

by

L.F. Giovando

Institute of Ocean Sciences
Department of Fisheries and Oceans
Sidney, B.C. V8L 4B2

Copyright Minister of Supply and Services Canada--1984
Cat. No. Fs97-16/25 ISSN 0711-6721

Correct citation for this publication:

Giovando, L.F. 1984. Observations of Seawater Temperature and Salinity at British Columbia Shore Stations, 1982.
Can. Data Rep. Hydrogr. Ocean Sci. 25:109p.

ABSTRACT

Giovando, L.F. 1984. Observations of Seawater Temperature and Salinity at British Columbia Shore Stations, 1982. Can. Data Rep. Hydrogr. Ocean Sci. 25:109p.

Surface oceanic salinities and temperatures have been recorded once a day at several locations on the coast of British Columbia for varying lengths of time--from about one year to several decades. This publication presents the data obtained in 1982 from eighteen such shore stations.

The data obtained are presented in two forms. Firstly, tables provide, for each site, the monthly means and the associated standard deviations, as well as the maximum and minimum values recorded during each month; the annual means are also listed. Secondly, graphs indicate the behaviour, throughout the year, of the data after the higher-frequency oscillations (e.g., those associated with lunar tides) have been removed by the use of a seven-day normally-weighted running mean.

Keywords: British Columbia, shorestations, surface temperatures, surface salinities.

RÉSUMÉ

Giovando, L.F. 1984. Observations of Seawater Temperature and Salinity at British Columbia Shore Stations,1982. Can. Data Rep. Hydrogr. Ocean Sci. 25:109p.

Les températures et salinités des eaux oceaniques superficielles ont été relevées une fois par jour a de nombreux endroits le long de la côte de la Colombie-Britannique, pendant diverses periodes variant d'environ un an à plusieurs décennies. Le présent rapport porte sur les données obtenues en 1982 à 18 de ces stations côtières.

Cette information est présentée sous deux formes. La première consiste en des tableaux qui regroupent les moyennes mensuelles et les écarts types, les valeurs minimale et maximale relevées chaque mois et les moyennes annuelles pour chaque site. Viennent ensuite des graphiques illustrant le comportement des données pendant toute l'année, après que les oscillations de plus haute fréquence (par ex. celles associées avec les marées lunaires) ont été éliminées à l'aide d'une moyenne cumulée normalement pondérée sur 7 jours.

Mots-clés: Colombie-Britannique, stations côtières, températures et salinités superficielles

INTRODUCTION

A program involving once-daily observations of sea-surface salinities and/or temperatures at numerous locations on the coast of British Columbia has been in effect since the early 1930's. Most of these sampling sites have been at lightstations operated by the Ministry of Transport (MOT) or its organizational predecessors. For this reason, the program was originally termed the "Lighthouse Sampling Program." However, it has recently been re-named the B.C. Shorestation Oceanographic Program. This latter, more general, title is considered more apt for two reasons:

(a) It takes into account the fact that locations other than lightstations--such as government marine institutions or primary meteorological stations--were also originally designated, or have since been added, as sampling sites.

(b) It allows for the possibility that measurement of parameters other than surface salinity and temperature may be undertaken at one or more of these sampling sites in future.

The number of sites reporting at any given time has varied throughout the course of the program; sampling has been discontinued (and in a few cases later resumed) at some places and commenced (not necessarily simultaneously) at others. All available data obtained from these shorestations prior to 1982 have been published in various formats (e.g. Giovando 1981a and b, 1983; Hollister and Sandnes, 1972).

During recent years, nineteen such locations have usually provided sea-surface data. Fifteen of these are MOT lightstations. The remaining four are: the Pacific Biological Station (of the Department of Fisheries and Oceans (DFO)[1]) at Departure Bay; the West Vancouver Laboratory (West Van)--formerly the Pacific Environment Institute[1]--also of DFO; the Western Canadian Universities Marine Biological Station at Bamfield; and the meteorological station (of the Atmospheric Environment Service (AES) of the Department of Environment (DOE)[1]) at Cape St. James. All of these stations except Bamfield reported data during 1982.

The stations in question are shown (underlined) in Figure 1. Table 1 lists them in northwest-to-southeast order, along the "outside coast" (Langara Island to Race Rocks) and along the Strait of Georgia (Cape Mudge to Active Pass); the general location of each station, as well as information about the observers who obtained the data during 1982, are also given.

---

[1]On 1 April 1977, the Pacific Environment Institute became the West Vancouver Laboratory. On 1 April 1979, the then Department of Fisheries and Environment (DFE) was split into two new Departments--Fisheries and Oceans (DFO), and Environment (DOE).

It may also be noted that, prior to 1982, the headquarters of the program was located first at the Pacific Biological Station (1934-70), and then at the West Vancouver Laboratory (1971-81). From 1982, it has been situated at the Institute of Ocean Sciences (of DFO) located at Sidney, B.C. The Institute is referred to as "IOS" whenever it is mentioned throughout the remainder of this report.

OBSERVATIONAL EQUIPMENT AND PROCEDURES

Except at Cape Beale and Active Pass, each daily observation was made at daytime high tide. At Cape Beale, sampling was carried out one hour before the daytime high tide. At Active Pass, observations were done at daylight high-water slack. All sampling times were determined by reference to the Canadian Tide and Current Tables (Fisheries and Oceans, 1982). On occasion--because of weather conditions or of the press of the observer's primary duties--the schedule could not be strictly adhered to; however, results obtained within $\pm$ one hour of the desired time were recorded. For reasons of observer safety, sampling was never attempted in darkness at any station.

(a) Temperature

At all eighteen stations reporting data in 1982, water temperature was measured by means of a mercury-in-glass thermometer. At eleven, the thermometers used recorded in degrees Fahrenheit (^{o}F)--as has been the practice since the inception of the program. These instruments cover the range -10^{o} to 145^{o}F, and are graduated in 1^{o} intervals. At the remaining seven stations, Celsius (^{o}C) thermometers--either of range -10^{o} to 60^{o}C and interval 0.5^{o}, or of range -25^{o} to 55^{o}C and interval 1^{o}--were employed. The seawater temperature was estimated to within $\pm$0.1^{o}F or $\pm$0.1^{o}C. (Before being sent to a station, each field thermometer is checked against a calibrated one; the maximum acceptable error is either $\pm$0.4^{o}F or $\pm$0.2^{o}C.)

It is to be noted that more stations recorded temperatures in ^{o}C in 1982 than was the case in the previous year (7, as compared to 3). This "conversion" to measurement in Celsius is being carried out because of the near-total predominance of this scale that now prevails in marine affairs. It is hoped to effect a complete changeover in the shorestation program by the end of 1983. The thermometers of range -25^{o} to 55^{o} are to be the ones generally used.

Again, because of the importance of the Celsius scale, all shorestation sea-surface temperature data obtained subsequent to 1977 have been published in ^{o}C. Therefore, for those stations still utilizing Fahrenheit thermometers in 1982, the original readings were converted to the corresponding Celsius values--rounded off to the first decimal place.

At most stations, the thermometer is (partially) enclosed in a protective case of 2.5-cm (1-in) aluminum pipe; this case also provides a "well" around the bulb of the thermometer. The case is attached to the end of a pole (also of aluminum pipe) which can be as long as about 6 m (20 ft);

the greater pole lengths are necessary at sites where observations are carried out from, say, steep bluffs. The thermometer is lowered to a depth of 1m, and left for about two minutes. It is then raised and the water temperature recorded. (At a few of these stations, seawater is obtained by bucket during inclement weather.) At the remaining sampling sites, either a bucket or a Van Dorn sampling bottle is used for all oceanographic observations. When bucket or bottle is used the thermometer is immediately immersed in the sample; its temperature is read after about two minutes.

(b) Salinity

Salinities were determined at sixteen stations (all except Cape St. James[2] and West Van[3]). At the sites at which the pole assembly is usually utilized, a plastic or glass bottle--usually of about 710-cc (25-oz) capacity--is also attached to the assembly. The uncapped bottle will fill during immersion. At the same time that the temperature of the water is recorded, a sample is drawn from the bottle for use in the determination of salinity. For those sites where a bucket (e.g. Cape Beale) or a bottle (e.g. Bamfield) is used, the salinity sample is drawn from the bucket or bottle.

At all but two of these sixteen stations, the density of each sample was determined by hydrometer. (The salinity, in °/oo (parts per thousand), is then obtained from this value of density.) The hydrometers employed are similar to those used by the U.S. Coast and Geodetic Survey (USC&GS) at its tidal stations[4]; they actually measure the specific gravity[5] of a seawater sample. Specific gravity is a ratio of two densities and is therefore a dimensionless quantity. If however, by definition, distilled water at a temperature 4°C (39.2°F) has a density $\rho_m = 1$, then the specific gravity of a substance having a density ρ is $\frac{\rho}{\rho_m}$ and will be numerically equal to the value of ρ.

The density (or specific gravity) of a seawater sample depends upon both the salinity (the quantity of dissolved material in the sample) and the temperature of the sample at the time the measurement is made. Densities determined by hydrometer without temperature control must therefore be reduced to some "standard" temperature for conversion to the corresponding salinities. The standard adopted for this program is 15°C (59°F), the same as that presently used by the USC&GS.

---

[2]Measurement of salinity was discontinued at Cape St. James on 31 May 1971.

[3]Only temperature has been measured at West Van since sampling began there on 3 December 1979.

[4]Since 1970, the USC&GS has been a component of the National Ocean Surveys of the National Oceanic and Atmospheric Administration (NOAA).

[5]It should be noted that the term "specific gravity" has recently been replaced, in scientific usage at least, by the term "relative density."

An expression of the general form Sp. Gr. Tp. (or Temp.) $15/4^{\circ}$ is provided on every hydrometer utilized in this program. It incorporates both the basis of specific gravity (distilled water at $4^{\circ}C$ ($39.2^{\circ}F$)) and the standard temperature ($15^{\circ}C$, or $59^{\circ}F$) employed.

Hydrometers are supplied to the stations in one or more of three ranges of specific gravity: 0.9960-1.0110, 1.0100-1.0210, and 1.0200-1.0310. The scales are divided into intervals of 0.0002, and the values are estimated to $\pm$0.0001; the instruments are read employing techniques described by the USC&GS (Adams, 1942). Each instrument has its calibration checked immediately before being sent to a station.

Salinities at Departure Bay were determined by means of a laboratory inductive (electrodeless) salinometer--an Auto-Lab Model Mark III. Values were estimated to the nearest $0.001^{\circ}/oo$. The accuracy of this model is claimed to be $\pm 0.003^{\circ}/oo$ with duplicate determinations.

It may be noted that "comparison" determinations involving several dozen samples collected at British Columbia shorestations have indicated that about 85% of the "hydrometer" salinity values were within $\pm 0.3^{\circ}/oo$ of the corresponding ones obtained by salinometer (Hollister, unpublished).

Because of a continuing incapacity of inductive-salinometry equipment (see Giovando, 1981b), samples obtained from Cape Beale were analyzed by means of an American Optical Corporation salinity refractometer having automatic temperature compensation. The accuracy of this instrument is believed to be about $\pm 0.8^{\circ}/oo$. Readings were estimated to the equivalent of about $\pm 0.4^{\circ}/oo$.

The time of each daily observation, as well as the associated seawater temperature and hydrometer, salinometer or refractometer readings, were recorded on monthly field sheets. These sheets were forwarded to IOS, where they underwent preliminary processing.

PRELIMINARY PROCESSING OF THE DATA

The temperature data were scanned, and values were rejected if it was discovered that a faulty thermometer had been used, or if the value was obviously the result of a misreading or of any other error in technique. Observed hydrometer readings were reduced to densities at the standard temperature, $15^{\circ}C$ ($59^{\circ}F$), by means of tables prepared by the USC&GS (Zerbe and Taylor, 1953). The appropriate calibration correction was then applied to each such density value. These corrected values were in turn converted to salinities. A salinity value was rejected, again, only if it obviously had resulted from a misreading of hydrometer, salinometer or refractometer or from other procedural errors.

If observations were missing for one day or for two consecutive days, the resulting gap was filled by value(s) obtained by linear interpolation utilizing the two observations bounding the gap. No interpolation was

undertaken in those cases for which readings had been missed for three or more consecutive days (whether by accident or by design). Interpolated values were used to provide continuity to graphical representation of the data (see next section).

The salinity values determined by inductive salinometer were reported, in "final" form, to two decimal places. Those obtained by hydrometer or by refractometer were reported to only one decimal, because of the lesser accuracy of these instruments compared to that of the salinometer.

COMPUTER PROCESSING OF THE DATA

The daily temperature and salinity data remaining after the preliminary procedures noted above were then processed by computer to provide tabular and graphical representations and summaries. For each station, this procedure involved the determination of the twelve monthly means for temperature and for salinity, as well as of the corresponding standard deviations. Annual means were also computed. All such means--except for those associated with salinity for months during which a salinometer was utilized--were rounded to one decimal place, and the corresponding standard deviations were truncated at the second decimal place. The remaining means were rounded to two places, and the corresponding standard deviations treated as just noted. Data obtained by interpolation were not utilized in the computation of the means.

A form of smoothing was performed on the data to minimize the effect of any variability associated with frequencies large compared to the annual frequency (those associated with lunar tides, for example). For simplicity, the daily values of salinity and/or temperature at each sampling station were here considered to be equally spaced in time--with a sampling interval, therefore, of 24 hours. A seven-day, normally-weighted running mean (Holloway, 1958) was utilized to smooth the resulting series; this form of filtering is considered to result in an output free of such defects as "polarity reversals" or phase shifts. The running mean was computed, for the entire year, for both temperature and salinity. In order that these means for each station be as continuous as possible consistent with the data involved, daily values obtained by interpolation were utilized in the associated computations. However, when a period of greater than two consecutive days of missed data was encountered the computations were "interrupted."

From the inception of computer processing of the shorestation data (1965), and through 1981, this phase was carried out by the Marine Environmental Data Service (MEDS), of DFO, in Ottawa, Ontario, or its predecessor, the Canadian Oceanographic Data Centre (CODC). The programs utilized were discussed by Somers (1965). However, with the relocation of the shorestation project to IOS--which itself possesses a major computing facility--it was decided that 1982 and future data would be processed there. The geographically "nearby" IOS facility provides many advantages to the project--primarily in the saving of time and of effort--over the more "remote" one at MEDS.

PRESENTATION OF THE DATA

The data from each station are presented in two forms:

(1) Tabulations, in monthly format, of the daily values of temperature in ^{o}C and of salinity in parts per thousand ($^{o}/oo$)--pages 18 to 89. The results are listed in the same station order as that given in Table 1. Three months' data are listed on each page. Also recorded for each month are the mean, the standard deviation (STD. DEV.), the number of observations (OBSVNS.) involved in the computations of these two quantities, and the MAXIMUM and MINIMUM values. The annual means (YRLY. MEANS) for temperature and salinity are included with the December output for each station. Each interpolated daily value is identified by an asterisk (*). "Missed" values with which no interpolation is associated are denoted by an * followed by a blank space. Invalid days, such as April 31, are indicated by a blank space alone. Both the latitude and the longitude of each station (in degrees, and minutes and tenths of minutes) are noted on every page, immediately after the station designation. This compressed, "decimal," notation for minutes is a departure from previous practice in these reports; it has replaced "minutes and seconds." For ease in reference, the monthly- and annual-mean temperatures and salinities have been summarized. Temperatures in ^{o}C are given in Table 2. In addition, the ^{o}F equivalents of the values in Table 2 are provided in Table 3--primarily for the convenience of those who, because of either choice or necessity, still employ the Fahrenheit scale. The corresponding salinities are given in Table 4.

(2) "Annual" graphs of the seven-day, normally-weighted running means for temperature and salinity--pages 92 to 109. These graphs are copies of the computer-generated plots of the means. Any interruption--due to missing data--in the associated computations will result in a gap in the plotted output as well. Each graph for temperature is provided with scales in both ^{o}C and ^{o}F.

The 1982 representations have been altered somewhat from those of previous years. The size of each graph has been reduced by about one third in each dimension. The change has been introduced basically as a paper-saving feature. Previously, each graph (temperature or salinity) occupied an entire page; the new format permits both graphs for a station to be placed on a single page. The format therefore also permits a more easy visual comparison of the behavior of "corresponding" salinities and temperatures with time than was possible previously. The reduction in graph size has resulted in little or no loss of detail--by comparison to the previous representation.

Several features associated with the information presented should be noted:

(a) Circumstances beyond the control of the sampling program have resulted in significant data shortfalls at some stations.

(i) At Bamfield, no sampling was carried out during the year (as previously noted--page 1).

(ii) At Departure Bay, observations have not--since May 1974--been carried out on weekends (Saturdays and Sundays) or on statutory holidays. The maximum number of (non-interpolated) values available for the determination of any monthly mean has therefore been permanently reduced from, approximately, thirty to twenty at this site. Also, no salinity values at all were obtained during either April or May. Only a few observations of salinity were made in February (8), or of either temperature or salinity in July (9 and 8, respectively).

In the "overall" view provided by the monthly-mean summaries in Tables 2, 3 and 4, the reader is alerted to the presence of data-poor months by the "overbar" symbols "=" and "-". In these tables, those months for which 1 to 10 (or 11 to 20) values of temperature or salinity were recorded have been flagged by $\bar{=}$ (−); it is hoped that these (admittedly-arbitrary) designations will emphasize the need for circumspection in the use of the data involved.

(b) At Langara Island and Egg Island, a few salinities of 33°/oo or more were recorded during 1982--7 at Langara (3 in April and in September, 1 in August) and 1 at Egg (November). Such values have also been obtained in some previous years at B.C. shorestations (see e.g. Giovando, 1983). All physical-oceanographic studies so far conducted indicate that such values of salinity are extremely unlikely to occur in the nearshore surface waters of B.C. The observers at the stations had previously been apprised of this fact, and therefore checked both equipment and procedures thoroughly during the "high-value" periods. No obvious faults or errors were revealed; however, with due regard to the uncertainties associated with salinities determined by hydrometer, such values should be regarded with extreme caution pending a satisfactory explanation of their occurrences. These "high" salinities have been retained in the tabular output but have been flagged by a double asterisk (**); arbitrarily, they have been utilized in the computations of the running means but not in those of the monthly means.

(c) At some of the program's shorestations in the Strait of Georgia, there can exist periods throughout which the recorded daily salinity values (and therefore the associated running means) are relatively low--often appreciably less than 20°/oo. Such values can be present at any time. However, they occur by far the most frequently during the months June through August--at which time they presumably result primarily from the marked freshening of the surface waters by runoff from the Fraser River. In 1982, low values were noted especially at Active Pass and Entrance Island, but also to a lesser degree at Departure Bay and Sisters Island. However, the salinity range common to all the other reporting sites (20°/oo to 34°/oo) has been retained in these four instances as well. This has been achieved by "displacing" running-mean values of 20°/oo or less to the uppermost level of the graph; for these values the 34°/oo level becomes in effect the 20°/oo level, the 32°/oo level the 18°/oo level, and so on. As an

example, the running-mean minimum that occurred during the first week of July 1982 at Sisters Island (page 105) is in this representation seen to have a "graphical" value of about 17.0. The value actually calculated for the minimum was 16.92.

(d) At West Van, temperatures from 20 October to 31 December 1982 were reported only to the nearest half or whole degree Celsius.

Brief mention may be made of some recent efforts at analysis (as opposed to "annual" tabulations) of the B.C. shorestation data obtained up to the end of 1976. A preliminary study (Webster and Farmer, 1976) examined data from three of the stations on the outer coast--Langara Island, Kains Island and Amphitrite Point. The primary purpose was the development of techniques for the presentation of important features of the data--such as long- and short-term variations at each station, and the possible relationships between the data from different stations. The techniques applied were simple annual and monthly averaging, and the relatively modern technique of spectral analysis. The same authors later extended these analytical techniques to a further fourteen stations (Webster and Farmer, 1977).

A third publication (Associated Engineering Services Ltd., 1977) deals with the general efficiency of the present shorestation sampling program, especially in the light of financial constraints involved. Sampling errors, especially those inherent in salinity determination by hydrometry, are exhaustively discussed. Central to the study was a questionnaire--forwarded both to the then (1977), and to the potential, users of the data--seeking to clarify such information as the time scales of interest and the required accuracy of the data. Responses to this questionnaire, and the sampling accuracies determined, were utilized to prepare several options (further versions of the sampling program). These options, each of different sampling intensities and/or instrumentation mixes, and cost, are presented for consideration by the users.

ACKNOWLEDGEMENTS

The sea-sampling program at British Columbia shore stations owes its success primarily to the dedication of the many observers who are taking, or have taken, part in the obtaining of data. These observations have maintained a remarkable continuity of effort, often in the face of extremely hazardous sea and weather conditions. The several vital contributions of MOT to the program are gratefully acknowledged: the provision of the voluntary services of the lightkeepers as observers, as well as the excellent assistance received from the District Managers and Staffs of the Marine Transportation Division in Victoria and Prince Rupert, and from its Radio Branch, which transmits the numerous messages involved in the program. The services of the meteorological staff at Cape St. James have been made available to the program through the kind permission of the Regional Director of the Pacific Region of AES. Shorestation observers at all MOT or AES stations with the exception of Cape Beale, receive payment from Ocean and Aquatic Sciences, DFO, for their work on behalf of the program. The observer at Cape Beale is paid by Bamfield. Data from Departure Bay and West Van are obtained by staff of those establishments. Thanks are due the Director at Bamfield, Dr. R.E. Foreman, for permission to publish the Cape Beale data included in this report, and to Miss Sabina Leader for her efforts in making these data available. The author is also grateful to: Rene Chave, who adapted the "original" data-processing routines for use on IOS's computing facility; and Miss Susan Ball, who carried out the processing itself, and also assembled this report into final form. The report was typed by Ms Judy Pitcher.

REFERENCES

Adams, K.T. 1942. Hydrographic manual. Rev. Ed. U.S. Coast and Geodetic Survey. Special Publication No. 143.

Associated Engineering Services Ltd. 1977. Analysis of Lighthouse Oceanographic Data--Phase III. Contractor Report Series 77-5. For: Institute of Ocean Sciences, Patricia Bay--Sidney, B.C.

Fisheries and Oceans Canada. 1982. Canadian Tide and Current Tables, Volumes 5 (Juan de Fuca and Georgia Straits) and 6 (Barkley Sound and Discovery Passage to Dixon Entrance). Fisheries and Oceans, Ottawa.

Giovando, L.F. 1981a. Observations of Seawater Temperature and Salinity at Cape Beale Lightstation and Bamfield Marine Station, 1969-1977. Pacific Marine Science Report 81-6. Institute of Ocean Sciences, Sidney, B.C.

Giovando, L.F. 1981b. Observations of Seawater Temperature and Salinity at British Columbia Shore Stations, 1979. Pacific Marine Science Report 81-23. Institute of Ocean Sciences, Sidney, B.C.

Giovando, L.F. 1983. Observations of Seawater Temperature and Salinity at British Columbia Shore Stations, 1981. Can. Data Rep. Hydrogr. Ocean Sci. 13.

Hollister, H.J. and A.M. Sandnes. 1972. Sea surface temperatures and salinities at shore stations on the British Columbia coast, 1914-1970. Pacific Marine Science Report 72-13. Environment Canada, Marine Sciences Directorate, Pacific Region, Victoria, B.C.

Holloway, J.L., Jr. 1958. Smoothing and filtering of time series and space fields. In: Advances in Geophysics, Vol. 4, pp. 351-389. Academic Press Inc., New York.

Somers, H. 1965. Program G20106, daily seawater observations. Memorandum 1220-2-4/April 30, 1965. Canadian Oceanographic Data Centre, Special Administrative Services Division, Ottawa.

Webster, Ian and David M. Farmer. 1976. Analysis of Salinity and Temperature Records Taken at Three Lighthouses on the B.C. Coast. Pacific Marine Science Report 76-11. Institute of Ocean Sciences, Patricia Bay--Victoria, B.C.

Webster, I. and D.M. Farmer. 1977. Analysis of Lighthouse Station Temperature and Salinity Data--Phase II. Pacific Marine Science Report 77-21. Institute of Ocean Sciences, Patricia Bay--Sidney, B.C.

Zerbe, W.B. and C.B. Taylor. 1953. Sea water temperature and density reduction tables. U.S. Coast and Geodetic Survey. Special Publication No. 298.

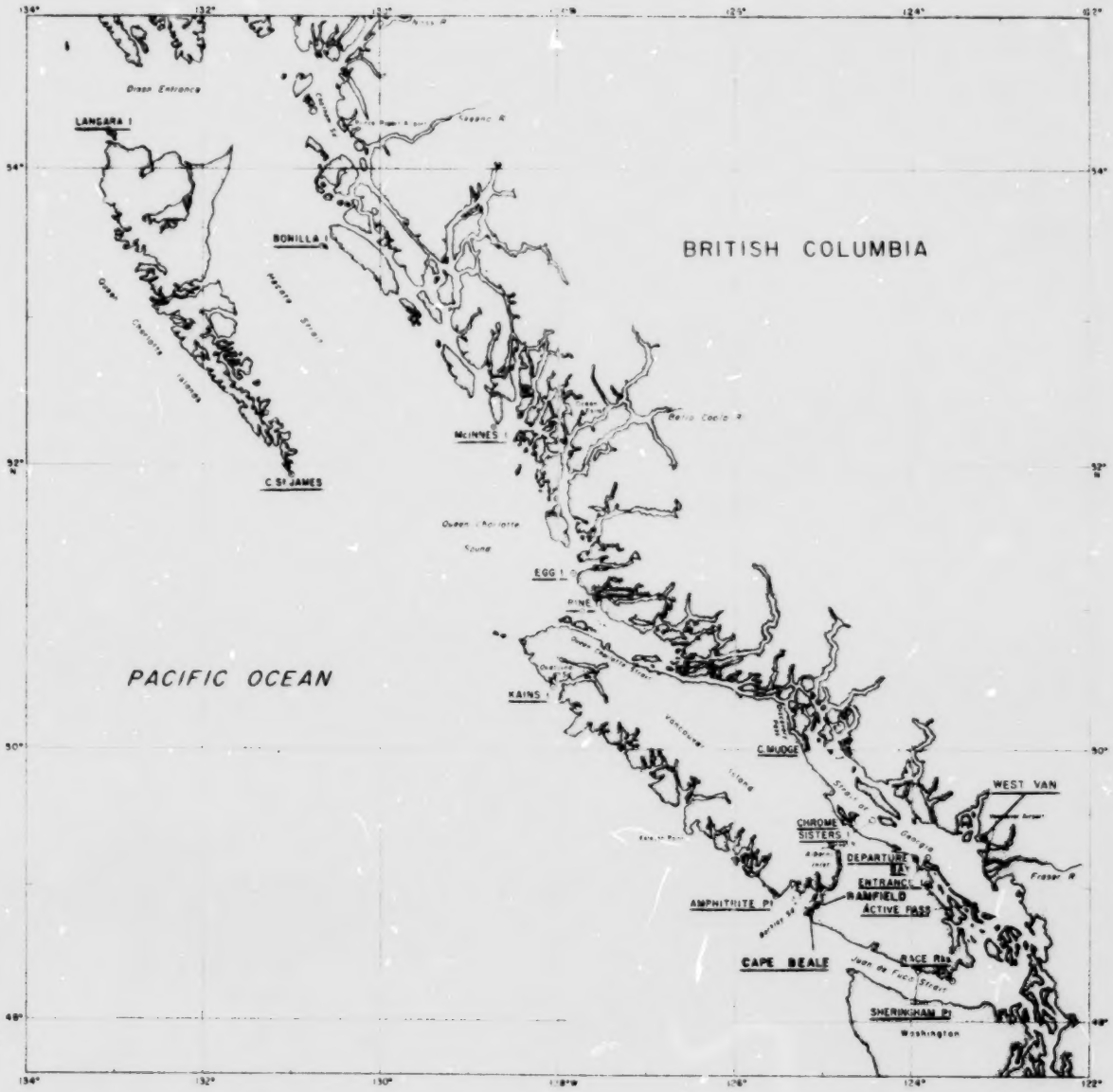


Figure 1. Location of B.C. shorestations (underlined) making the daily oceanographic observations (1982) reported in this publication.

Table 1. B.C. shore stations providing the oceanographic data reported in this publication: general locations, and observers.

STATION	LOCATION	OBSERVER(S)
Outside Coast		
Langara Island	Dixon Entrance, south side	J.E. Redhead (Mrs.) E. Ashe W. Fullerton
Bonilla Island	Hecate Strait, north	L. Beaudet (Mrs.)
Cape St. James	Queen Charlotte Islands, south end	Meteorological staff
McInnes Island	Milbanke Sound entrance, north side	K. Coldwell (Mrs.)
Egg Island	Smith Sound, southern entrance	S.G. Westhaver R.E. Akerstrom
Pine Island	Queen Charlotte Strait, western entrance	D. Fraser
Kains Island	Quatsino Sound entrance, north side	R.W. Moe I.R. Crocker
Amphitrite Point	Barkley Sound, western entrance	C. Slater (Mrs.)
Cape Beale	Barkley Sound, eastern entrance	A.D. Thomson G. Doyle E. Brand (Ms.)
Bamfield	Barkley Sound, near eastern entrance	No Data, 1982
Sheringham Point	Juan de Fuca Strait, northern side	E. Bruton (Mrs.)
Race Rocks	Juan de Fuca Strait, eastern end	C.F. Coffey F.B. Anderson (Mrs.) T.D. Holdaway

Table 1 Continued

STATION	LOCATION	OBSERVER(S)
Strait of Georgia		
Cape Mudge	Strait of Georgia, northern entrance	K. Nelson
Chrome Island	Strait of Georgia, off central western shore	M.V. Stewart (Mrs.)
Sisters Island	Strait of Georgia, central	D.J. McNeil W. Milne D. Earl C. Restall
Departure Bay	Strait of Georgia, central western shore	A.J. Dodimead
Entrance Island	Strait of Georgia, off central western shore	E. Cehak (Mrs.)
West Vancouver	Strait of Georgia, central eastern shore	Aquarium Staff
Active Pass	Strait of Georgia, southwestern shore	J.E. Ruck

Table 2. Monthly- and annual-mean temperatures (°C) - 1982

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Langara I.	6.0	5.8	6.3	7.1	8.5	10.1	11.3	12.0	12.0	17.7	8.3	7.4	8.9
Bonilla I.	6.5	6.1	6.6	7.4	9.0	10.7	11.5	12.2	11.9	10.3	8.2	7.6	9.0
Cape St. James	8.1	7.5	7.6	7.9	8.9	10.8	11.9	12.5	12.3	10.3	8.7	8.8	9.6
McInnes I.	7.2	6.5	6.6	7.6	8.8	11.2	13.1	13.6	13.0	10.7	8.3	7.6	9.6
Egg I.	7.3	7.1	7.2	8.1	9.4	12.4	12.8	12.3	10.7	9.5	8.8	8.3	9.5
Pine I.	7.2	7.0	7.4	7.9	8.6	9.6	10.2	10.3	9.8	9.3	9.1	8.2	8.7
Kains I.	7.5	7.3	7.8	8.5	9.9	11.8	12.8	13.4	13.4	11.2	9.2	8.4	10.1
Amphitrite Pt.	7.6	7.4	8.2	9.2	10.2	11.5	12.4	13.4	13.7	11.8	10.3	9.0	10.5
Cape Beale	7.4	7.6	8.2	9.5	10.6	11.3	12.2	12.0	11.4	10.6	9.2	8.4	10.0
Bamfield	No data, 1982												
Sheringham Pt.	7.7	7.3	8.1	8.5	9.5	10.6	11.2	11.4	11.3	10.4	9.6	9.1	9.6
Race Rocks	7.2	7.5	8.0	8.9	10.0	10.7	11.4	11.8	11.4	10.3	8.8	8.3	9.6
Cape Mudge	7.2	7.5	7.9	9.0	11.8	14.3	16.1	15.1	13.9	11.0	9.5	7.6	11.1
Chrome I.	7.7	8.1	8.4	9.6	12.8	17.8	17.7	17.5	15.6	12.2	9.6	8.7	12.2
Sisters I.	6.8	6.8	7.2	8.7	11.3	17.6	17.6	16.8	15.6	11.5	8.9	8.1	11.4
Departure Bay	6.2	6.7	7.6	9.3	11.6	16.7	17.6	16.7	15.2	11.5	8.7	7.6	11.4
Entrance I.	6.8	7.1	7.4	8.6	11.7	16.4	16.2	16.0	15.2	11.2	8.9	8.1	11.2
West Vancouver	5.8	5.7	7.0	7.9	10.7	14.7	15.6	16.3	14.6	10.7	7.6	7.0	10.4
Active Pass	7.1	7.4	8.1	9.2	11.4	14.9	14.8	15.3	14.2	11.3	9.0	8.1	10.9

Note: - Signifies no data obtained.
$\overline{x}$ Signifies months in which 11 to 20 daily values of temperature were recorded.
$\overline{\underline{y}}$ Signifies months in which 1 to 10 daily values of temperature were recorded.

Table 3. Monthly- and annual-mean temperatures (^{o}F)- 1982

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Langara I.	42.8	42.4	43.3	44.8	47.3	50.2	52.3	53.6	53.6	51.3	46.9	45.3	47.8
Bonilla I.	43.7	43.0	43.9	45.3	48.2	51.3	52.7	54.0	53.4	50.5	46.8	45.7	48.2
Cape St. James	46.6	45.5	45.7	46.2	48.0	51.4	53.4	54.5	54.1	50.5	47.7	47.8	49.3
McInnes I.	45.0	43.7	43.9	45.7	47.8	52.2	55.6	56.5	55.4	51.3	46.9	45.7	49.1
Egg I.	45.1	44.8	45.0	46.6	48.9	54.3	55.0	54.1	51.3	49.1	47.8	46.9	49.1
Pine I.	45.0	44.6	45.3	46.2	47.5	49.3	50.4	50.5	49.6	48.7	48.4	46.8	47.7
Kains I.	45.5	45.1	46.0	47.3	49.8	53.2	55.0	56.1	56.1	52.2	48.6	47.1	50.2
Amphitrite Pt.	45.7	45.3	46.8	48.6	50.4	52.7	54.3	56.1	56.7	53.2	50.5	48.2	50.7
Cape Beale	45.3	45.7	46.8	49.1	51.1	52.3	54.0	53.6	52.5	51.1	48.6	47.1	49.8
Bamfield	No Data, 1982												
Sheringham Pt.	45.9	45.1	46.6	47.3	49.1	51.1	52.2	52.5	52.3	50.7	49.3	48.4	49.2
Race Rocks	45.0	45.5	46.4	48.0	50.0	51.3	52.5	53.2	52.5	50.5	47.8	46.9	49.1
Cape Mudge	45.0	45.5	46.2	48.2	53.2	57.7	61.0	59.2	57.0	51.8	49.1	45.7	51.6
Chrome I.	45.9	46.6	47.1	49.3	55.0	64.0	63.9	63.5	60.1	54.0	49.3	47.7	53.9
Sisters I.	44.2	44.2	45.0	47.7	52.3	63.7	63.7	62.2	60.1	52.7	48.0	46.6	52.5
Departure Bay	43.2	44.1	45.7	48.7	52.9	62.1	63.7	62.1	59.4	52.7	47.7	45.7	52.3
Entrance I.	44.2	44.8	45.3	47.5	53.1	61.5	61.2	60.8	59.4	52.2	48.0	46.6	52.1
West Vancouver	42.4	42.3	44.6	46.2	51.3	58.5	60.1	61.3	58.3	51.3	45.7	44.6	50.5
Active Pass	44.8	45.3	46.6	48.6	52.5	58.8	58.6	59.5	57.6	52.3	48.2	46.6	51.6

Note: - Signifies no data obtained
$\bar{x}$ Signifies months in which 11 to 20 daily values of temperature were recorded
$\bar{\bar{y}}$ Signifies months in which 1 to 10 daily values of temperature were recorded

Table 4. Monthly- and annual-mean salinities (°/oo) - 1982

Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Langara I.	31.8	31.9	32.0	32.0	31.7	32.0	31.9	32.0	32.4	32.0	31.8	31.8	31.9
Bonilla I.	30.6	30.5	31.0	30.7	31.0	31.2	31.0	31.5	31.7	31.4	31.2	31.5	31.1
McInnes I.	30.4	30.6	30.2	30.4	30.6	30.4	30.3	30.7	29.6	30.2	29.9	30.4	30.3
Egg I.	30.9	31.1	31.6	31.7	31.1	28.1	29.3	30.5	31.0	31.7	31.7	31.2	30.8
Pine I.	31.2	30.9	31.2	31.6	31.8	31.9	31.8	31.8	31.8	31.6	31.0	31.2	31.5
Kains I.	28.3	27.8	28.4	29.0	29.5	31.0	31.3	31.3	30.4	29.9	28.6	28.7	29.5
Amphitrite Pt.	28.5	27.1	27.9	27.5	30.3	30.8	30.4	30.7	29.7	29.3	28.1	28.7	29.1
**Cape Beale	28.3	27.9	28.7	28.0	30.4	30.3	29.9	30.0	30.3	29.6	30.4	29.4	29.5
Bamfield	No Data, 1982												
Sheringham Pt.	30.4	30.3	30.1	30.6	31.2	31.4	31.4	31.2	31.1	30.9	31.0	30.5	30.8
Race Rocks	31.2	31.1	30.8	31.1	31.6	31.7	31.6	31.3	31.3	31.4	31.2	30.9	31.3
Cape Mudge	28.4	28.5	28.7	28.9	29.3	28.7	25.9	26.2	27.3	28.8	28.5	28.9	28.1
Chrome I.	28.5	28.3	28.3	28.4	27.9	25.9	24.7	25.1	27.4	28.1	27.9	27.8	27.4
Sisters I.	28.6	28.4	28.3	28.3	28.4	23.7	20.4	22.6	25.7	27.7	27.6	28.2	26.5
*Departure Bay	26.81	25.53	26.89	--	--	21.42	19.72	22.79	24.77	26.31	26.65	25.13	24.60
Entrance I.	27.6	27.6	27.4	28.1	27.4	22.1	21.0	22.6	25.8	27.6	27.1	27.5	26.0
Active Pass	28.0	28.7	27.1	27.7	26.5	21.9	23.3	22.7	23.2	26.6	26.7	27.9	25.8

Note * Signifies daily salinity values were determined by inductive salinometer
** Signifies daily salinity values were determined by refractometer
- Signifies no data obtained
$\bar{x}$ Signifies months in which 11 to 20 daily values of salinity were recorded
$\bar{\bar{y}}$ Signifies months in which 1 to 10 daily values of salinity were recorded

Tabulations of Daily Sea-Surface Temperature and Salinity

1982

TEMP: Temperature (^{o}C)

SAL: Salinity (^{o}/oo)

LANGARA ISLAND 54 15.3 N 133 03.5 W

DATE	JANUARY TEMP	JANUARY SAL	FEBRUARY TEMP	FEBRUARY SAL	MARCH TEMP	MARCH SAL	1982
1	*	*	6.7	31.9	5.4	32.1	
2	*	*	6.7	31.8	6.2	31.9	
3	*	*	6.5	31.6	5.8	31.8	
4	*	*	6.3	31.6	5.6	31.9	
5	*	*	6.4	31.2	6.0	32.0	
6	5.7	31.6	6.2	31.6	6.7	31.9	
7	6.6	31.4	6.2	32.0	6.7	31.8	
8	7.4	31.6	6.7	32.3	6.3	31.6	
9	7.3	31.5	6.3	32.1	6.6	31.9	
10	7.3	31.6	6.2	32.0	5.9	32.1	
11	6.8	31.8	6.1	32.0	5.3	31.6	
12	6.9	31.6	5.8	32.1	6.1	31.8	
13	7.3	31.6	5.6	32.1	5.8	31.8	
14	7.1	31.9	5.8	31.9	6.3	31.8	
15	* 6.6	* 31.9	5.6	32.0	6.5	31.9	
16	6.1	31.8	5.6	32.1	7.0	31.8	
17	6.5	31.9	5.3	31.9	7.1	32.0	
18	6.1	31.9	6.0	32.0	6.9	32.7	
19	5.1	31.8	5.3	32.0	6.0	32.4	
20	3.5	31.9	5.3	32.0	6.0	31.9	
21	3.3	31.9	4.8	32.0	6.2	32.1	
22	2.7	32.0	5.3	32.0	6.6	32.3	
23	5.2	32.0	4.8	31.8	6.5	32.1	
24	6.2	31.9	* 4.8	* 31.9	6.2	32.1	
25	5.7	32.0	4.7	32.0	5.9	32.3	
26	6.0	31.6	5.8	31.6	6.1	31.9	
27	5.6	32.1	5.3	32.0	6.6	32.1	
28	5.9	31.8	* 5.4	* 32.0	6.8	32.0	
29	6.6	31.6			6.3	32.1	
30	6.2	31.6			6.8	32.3	
31	6.4	31.8			7.6	32.0	
MEANS	6.0	31.8	5.8	31.9	6.3	32.0	
OBSVNS.	25	25	26	26	31	31	
MAXIMUM	7.4	32.1	6.7	32.3	7.6	32.7	
MINIMUM	2.7	31.4	4.7	31.2	5.3	31.6	
STD.DEV.	1.24	.18	.60	.23	.51	.23	

LANGARA ISLAND 54 15.3 N 133 03.5 W

	APRIL		MAY		JUNE		1982
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL	
1	7.1	32.3	7.3	31.8	8.5	31.9	
2	6.6	32.0	7.9	31.9	8.4	31.8	
3	5.7	32.1	8.4	31.9	8.9	31.9	
4	6.4	32.1	7.9	31.6	8.7	31.9	
5	6.2	32.9	7.9	31.6	8.4	32.0	
6	6.9 **	33.3	8.3	31.6	8.9	32.5	
7	7.5 **	33.0	8.2	31.6	8.7	32.0	
8	7.3 **	33.0	8.4	31.6	9.6	32.0	
9	7.0	32.3	8.4	31.6	9.8	31.9	
10	6.8	32.3	7.9	31.6	9.9	32.0	
11	6.7	32.3	8.2	31.6	10.0	31.6	
12	7.2	32.3	8.8	31.9	10.6	32.0	
13	7.1	32.1	8.8	31.8	* 10.5	* 32.0	
14	7.7	32.1	* 9.1	* 31.8	10.3	32.1	
15	6.6	32.0	9.4	31.9	10.0	31.9	
16	6.6	32.0	8.8	31.8	11.1	32.0	
17	6.5	31.9	9.4	31.6	9.9	31.6	
18	6.7	31.8	8.3	31.5	10.6	32.1	
19	6.6	31.5	8.4	31.8	10.3	32.0	
20	7.3	31.8	8.7	31.9	9.9	32.0	
21	6.8	31.9	8.4	31.5	10.1	32.1	
22	7.3	31.6	9.0	31.5	10.5	31.9	
23	7.3	31.9	* 9.0	* 31.5	10.1	32.3	
24	7.6	32.1	8.9	31.6	10.0	32.4	
25	8.1	31.9	8.8	31.5	11.2	32.3	
26	7.6	31.9	9.4	31.8	10.1	32.0	
27	7.9	31.9	8.9	31.8	12.1	32.0	
28	7.7	32.0	9.5	32.0	12.7	32.1	
29	7.9	32.0	8.3	31.9	11.4	32.3	
30	7.2	31.8	8.6	31.9	11.6	32.1	
31			8.3	31.9			
MEANS	7.1	32.0	8.5	31.7	10.1	32.0	
OBSVNS.	30	27	29	29	29	29	
MAXIMUM	8.1	32.9	9.5	32.0	12.7	32.5	
MINIMUM	5.7	31.5	7.3	31.5	8.4	31.6	
STD.DEV.	.56	.27	.52	.16	1.09	.20	

LANGARA ISLAND 54 15.3 N 133 03.5 W

	JULY		AUGUST		SEPTEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	11.2	31.9	11.2	31.8	12.1	32.5
2	11.0	32.3	11.2	31.9	12.1	31.8
3	12.7	31.5	* 11.2	* 32.0	12.1	32.1
4	11.9	31.8	11.1	32.1	12.1	32.5
5	10.9	32.0	10.0	32.0	11.8	** 33.3
6	11.8	32.0	11.6	32.0	11.0	32.7
7	11.7	31.9	12.0	32.0	11.9	32.4
8	11.1	32.3	12.1	32.0	12.7	32.3
9	* 11.4	* 32.2	12.6	32.0	12.8	** 33.0
10	11.8	32.1	12.1	32.0	12.1	32.3
11	12.1	32.0	12.5	31.8	12.8	32.4
12	12.1	32.0	12.2	31.9	12.7	32.7
13	13.1	31.2	13.1	31.8	12.1	32.7
14	11.6	31.9	12.1	32.1	12.6	32.5
15	11.1	31.8	11.6	31.6	12.9	32.5
16	11.6	31.4	12.6	32.1	11.9	** 33.3
17	11.0	31.4	12.2	31.8	11.9	32.5
18	11.1	31.5	12.2	32.4	11.2	32.5
19	11.1	31.8	11.7	32.7	11.2	32.4
20	11.5	31.8	12.2	32.4	10.8	32.5
21	10.3	31.9	12.2	31.8	11.3	32.4
22	10.7	32.0	12.1	31.6	11.3	32.5
23	10.3	32.0	12.1	** 33.2	11.9	32.1
24	10.2	31.9	11.8	32.7	12.4	32.1
25	11.0	32.1	12.5	32.1	12.7	32.4
26	11.1	32.1	12.0	32.1	11.7	32.1
27	10.6	32.3	12.9	31.9	12.1	32.8
28	11.0	32.0	12.2	32.0	11.9	32.8
29	11.2	31.9	11.8	32.0	11.0	31.9
30	11.6	31.4	12.1	32.1	11.8	32.3
31	11.3	31.6	12.3	31.9		
MEANS	11.3	31.9	12.0	32.0	12.0	32.4
OBSVNS.	30	30	30	29	30	27
MAXIMUM	13.1	32.3	13.1	32.7	12.9	32.8
MINIMUM	10.2	31.2	10.0	31.6	10.8	31.8
STD.DEV.	.66	.28	.59	.26	.59	.25

LANGARA ISLAND 54 15.3 N 133 03.5 W

DATE	OCTOBER TEMP	OCTOBER SAL	NOVEMBER TEMP	NOVEMBER SAL	DECEMBER 1982 TEMP	DECEMBER 1982 SAL
1	11.7	32.0	9.4	31.8	7.7	31.9
2	11.7	32.0	9.7	32.1	7.8	31.9
3	10.8	31.9	9.4	31.9	7.1	31.8
4	11.0	32.1	9.4	31.9	8.3	31.9
5	11.6	32.3	9.4	31.9	7.3	31.8
6	12.2	32.3	9.6	31.6	7.5	31.8
7	11.8	32.0	9.4	31.8	7.2	31.8
8	11.7	32.4	8.9	31.5	* 7.2	* 31.7
9	12.2	31.9	8.6	31.8	7.3	31.5
10	12.1	31.6	8.9	31.8	7.3	31.8
11	11.4	31.4	8.1	31.6	7.8	31.6
12	12.3	31.9	8.4	31.8	8.1	31.6
13	12.8	31.8	8.6	31.8	7.8	31.6
14	* 11.9	* 31.8	8.9	31.5	7.2	31.6
15	11.0	31.9	8.8	31.8	7.2	31.9
16	10.1	31.8	8.3	31.6	7.8	31.6
17	9.6	31.9	8.3	31.6	7.8	31.9
18	9.4	32.0	7.7	31.9	7.8	31.9
19	9.4	32.1	7.2	31.8	7.4	31.8
20	9.5	31.9	6.7	31.5	7.4	31.8
21	9.4	31.9	6.7	31.8	7.7	31.9
22	9.9	31.8	6.9	31.8	7.2	31.8
23	9.7	31.8	6.2	31.6	7.4	31.8
24	10.0	31.8	7.7	31.8	7.2	31.8
25	9.7	32.3	7.8	31.6	* 7.2	* 31.8
26	10.2	31.8	8.2	31.6	7.1	31.8
27	10.0	31.8	8.1	31.9	7.3	31.8
28	9.9	32.3	7.9	31.9	7.2	31.8
29	10.0	32.0	7.8	31.9	7.2	31.8
30	10.1	32.3	7.3	31.9	6.7	31.8
31	9.4	32.1			7.2	31.8
MEANS	10.7	32.0	8.3	31.8	7.4	31.8
OBSVNS.	30	30	30	30	29	29
YRLY.MEANS					8.9	31.9
MAXIMUM	12.8	32.4	9.7	32.1	8.3	31.9
MINIMUM	9.4	31.4	6.2	31.5	6.7	31.5
STD.DEV.	1.09	.23	.95	.15	.35	.11

BONILLA ISLAND 53 29.6 N 130 38.1 W

	JANUARY		FEBRUARY		MARCH	1982
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	6.4	31.2	6.8	29.5	6.0	31.1
2	5.9	31.0	7.1	30.2	6.2	31.0
3	6.0	30.7	6.6	30.6	6.1	31.1
4	5.7	30.7	6.7	30.4	5.4	31.1
5	4.9	31.2	6.2	30.2	5.5	30.8
6	5.8	31.1	6.6	30.2	5.9	30.8
7	7.2	31.0	6.6	30.3	6.6	30.8
8	7.7	30.6	6.8	30.7	6.5	30.7
9	7.9	30.8	6.1	30.4	6.6	31.2
10	7.3	31.5	6.5	30.4	6.7	30.7
11	7.1	30.4	6.3	30.6	6.4	31.2
12	7.4	30.6	5.7	30.8	6.8	31.1
13	7.5	30.3	5.9	30.7	6.6	31.1
14	7.5	30.4	6.0	30.8	6.7	31.2
15	6.1	29.9	5.6	30.7	6.9	31.1
16	6.6	29.9	5.8	30.4	6.6	31.2
17	6.7	30.4	5.8	30.7	6.8	31.1
18	6.6	30.4	5.9	30.3	6.5	30.8
19	6.2	30.2	* 6.0	* 30.6	6.3	31.4
20	5.9	30.4	6.2	31.0	6.4	31.5
21	5.5	30.2	6.1	30.8	6.6	31.2
22	5.0	30.4	5.9	30.7	6.8	31.5
23	5.9	30.3	5.8	30.6	7.4	31.1
24	6.2	30.7	4.3	30.0	* 7.2	* 31.1
25	6.3	30.8	5.1	31.1	7.0	31.0
26	6.6	30.3	5.9	30.6	6.9	31.0
27	6.4	30.3	5.7	30.7	6.8	30.8
28	6.1	30.7	6.0	30.7	7.6	31.0
29	6.5	31.0			7.1	31.1
30	6.7	30.8			6.9	30.7
31	6.6	30.6			7.7	30.7
MEANS	6.5	30.6	6.1	30.5	6.6	31.0
OBSVNS.	31	31	27	27	30	30
MAXIMUM	7.9	31.5	7.1	31.1	7.7	31.5
MINIMUM	4.9	29.9	4.3	29.5	5.4	30.7
STD.DEV.	.74	.38	.57	.33	.52	.23

BONILLA ISLAND 53 29.6 N 130 38.1 W

	APRIL		MAY		JUNE		1982
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL	
1	6.8	31.0	7.1	30.8	8.9	31.2	
2	5.6	30.4	7.1	30.7	10.0	30.8	
3	6.3	30.7	7.3	30.7	9.8	30.7	
4	6.5	30.6	7.8	30.8	9.8	30.6	
5	7.1	30.8	* 8.0	* 30.5	9.7	30.7	
6	7.6	31.1	8.3	30.2	9.8	31.0	
7	7.7	31.0	8.2	30.7	9.9	31.1	
8	7.5	30.8	8.7	30.8	10.2	31.5	
9	8.0	31.0	8.8	31.0	11.3	30.8	
10	8.2	30.6	8.6	31.4	11.3	31.1	
11	8.3	31.1	9.7	31.0	* 11.1	* 31.1	
12	7.1	31.0	10.3	30.8	10.9	31.0	
13	7.1	30.3	10.1	31.1	10.8	31.4	
14	7.6	30.4	10.3	31.5	10.9	31.1	
15	7.1	31.0	10.2	31.4	9.9	31.0	
16	6.8	30.6	8.9	31.1	11.8	31.1	
17	6.4	30.8	9.4	31.2	11.2	31.0	
18	7.0	30.8	8.9	31.0	11.9	31.2	
19	6.8	30.3	9.1	31.1	11.9	31.0	
20	7.1	31.0	10.0	31.1	10.8	30.8	
21	7.2	30.3	8.9	31.1	11.0	31.1	
22	7.3	30.7	9.7	30.8	11.2	31.5	
23	8.2	30.8	8.4	30.2	10.5	31.6	
24	8.2	30.7	10.6	30.6	10.7	31.5	
25	8.3	31.1	9.3	30.6	11.5	31.8	
26	8.2	30.7	9.7	31.1	9.9	31.4	
27	8.1	30.4	9.3	31.1	11.9	31.6	
28	7.7	30.7	9.3	31.4	12.1	31.4	
29	7.6	30.8	9.0	31.1	9.7	31.5	
30	7.5	30.6	8.7	31.2	* 9.2	* 31.3	
31			8.9	31.1			
MEANS	7.4	30.7	9.0	31.0	10.7	31.2	
OBSVNS.	30	30	30	30	28	28	
MAXIMUM	8.3	31.1	10.6	31.5	12.1	31.8	
MINIMUM	5.6	30.3	7.1	30.2	8.9	30.6	
STD.DEV.	.68	.25	.93	.32	.86	.32	

BONILLA ISLAND 53 29.6 N 130 38.1 W

DATE	JULY TEMP	JULY SAL	AUGUST TEMP	AUGUST SAL	SEPTEMBER 1982 TEMP	SEPTEMBER 1982 SAL
1	8.6	31.1	12.3	31.1	12.2	31.8
2	11.1	31.0	12.8	31.0	13.6	31.1
3	11.0	30.8	12.1	30.6	13.1	31.9
4	11.3	31.1	12.6	30.4	13.3	31.6
5	10.8	31.1	12.1	30.0	11.3	31.4
6	10.9	31.2	12.7	30.6	11.9	31.1
7	* 11.3	* 30.9	14.1	31.4	12.3	31.8
8	11.7	30.6	15.1	31.1	12.4	31.8
9	12.1	30.8	14.8	31.2	12.6	31.6
10	13.4	31.0	13.7	31.0	11.2	31.2
11	13.2	30.8	12.5	31.1	11.8	31.5
12	12.3	30.0	12.2	30.0	11.8	31.6
13	13.1	30.4	12.3	30.7	11.9	31.6
14	11.6	30.8	11.6	31.1	12.2	31.5
15	11.4	30.4	* 12.1	* 31.1	11.7	32.1
16	11.1	30.6	12.6	31.1	11.4	31.8
17	11.3	30.8	13.8	32.0	* 11.5	* 31.7
18	11.4	30.7	12.3	31.9	11.7	31.6
19	12.5	31.1	11.7	31.8	11.3	32.3
20	12.1	31.0	11.6	31.8	11.6	32.0
21	11.9	31.0	11.6	31.8	11.4	31.9
22	11.0	31.1	11.8	31.6	11.7	32.0
23	11.6	31.1	10.4	32.5	11.8	31.9
24	10.6	31.6	10.5	32.4	12.1	31.9
25	11.0	31.8	10.4	32.5	11.7	31.8
26	11.0	31.8	11.3	32.3	11.0	32.0
27	11.9	31.6	9.9	32.4	11.4	31.6
28	10.4	31.1	10.4	32.0	11.5	32.1
29	11.6	30.8	11.5	32.4	11.9	31.6
30	12.0	31.0	11.8	32.0	11.6	31.9
31	* 12.1	* 31.0	12.1	31.8		
MEANS	11.5	31.0	12.2	31.5	11.9	31.7
OBSVNS.	29	29	30	30	29	29
MAXIMUM	13.4	31.8	15.1	32.5	13.6	32.3
MINIMUM	8.6	30.0	9.9	30.0	11.0	31.1
STD.DEV.	.94	.40	1.25	.73	.62	.29

BONILLA ISLAND 53 29.6 N 130 38.1 W

	OCTOBER		NOVEMBER		DECEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	11.3	31.6	9.8	31.2	7.9	30.8
2	11.1	31.8	9.0	31.2	7.8	31.1
3	10.7	31.5	9.3	31.1	7.6	30.8
4	10.9	31.8	* 9.1	* 30.9	7.9	30.6
5	10.9	31.2	8.8	30.7	7.1	31.9
6	10.8	31.8	8.7	31.0	7.4	31.2
7	10.5	31.5	8.8	31.2	7.4	31.0
8	10.4	31.2	8.6	31.5	7.7	30.7
9	10.4	30.8	7.9	31.5	7.8	31.8
10	11.0	31.6	8.8	31.4	7.5	31.6
11	10.6	31.0	8.1	31.1	7.4	31.1
12	11.1	31.2	8.4	31.1	8.1	31.4
13	11.4	31.1	8.2	31.2	8.0	32.0
14	10.9	31.4	8.5	31.1	7.8	32.0
15	10.8	31.2	8.3	31.1	7.7	31.4
16	10.4	31.6	8.2	30.7	8.4	31.8
17	9.9	31.5	8.3	31.2	8.1	32.0
18	10.4	31.4	7.4	31.0	7.7	31.4
19	9.8	31.8	8.1	31.0	7.7	31.4
20	10.0	31.6	7.6	31.4	7.1	31.1
21	9.8	31.6	6.7	31.1	7.3	31.9
22	9.9	31.4	7.3	31.9	7.2	31.4
23	9.7	31.2	7.2	31.9	6.8	31.8
24	9.8	31.5	7.1	31.1	7.1	31.2
25	9.5	31.2	6.4	30.8	* 7.4	* 31.5
26	9.5	31.1	8.4	31.2	7.7	31.8
27	9.4	30.8	8.6	31.0	7.1	31.9
28	* 9.4	* 30.9	8.4	31.2	7.6	31.9
29	9.4	31.1	8.1	31.6	7.6	32.0
30	9.9	31.2	8.2	31.5	7.2	31.8
31	9.7	31.2			7.1	31.1
MEANS	10.3	31.4	8.2	31.2	7.6	31.5
OBSVNS.	30	30	29	29	30	30
YRLY.MEANS.....					9.0	31.1
MAXIMUM	11.4	31.8	9.8	31.9	8.4	32.0
MINIMUM	9.4	30.8	6.4	30.7	6.8	30.6
STD.DEV.	.61	.28	.75	.29	.37	.44

CAPE ST JAMES 51 56.3 N 131 00.8 W

DATE	JANUARY TEMP		SAL		FEBRUARY TEMP		SAL		MARCH TEMP		SAL	1982
1	8.3	*			8.1	*			7.8	*		
2	8.1	*			8.1	*			7.4	*		
3	8.1	*			7.7	*			7.3	*		
4	6.5	*			7.9	*			7.4	*		
5	7.6	*			8.3	*			7.6	*		
6	8.2	*			8.1	*			7.4	*		
7	8.8	*			7.9	*			7.5	*		
8	8.8	*			7.6	*			7.7	*		
9	9.3	*			7.1	*			7.5	*		
10	9.1	*			7.8	*			7.5	*		
11	8.7	*			7.6	*			7.3	*		
12	8.9	*			7.7	*			7.3	*		
13	8.8	*			7.3	*			7.6	*		
14	8.7	*			6.7	*			7.7	*		
15	8.9	*			7.3	*			7.6	*		
16	8.3	*			7.2	*			7.5	*		
17	8.4	*			7.1	*			7.7	*		
18	8.1	*		*	7.1	*			7.7	*		
19	8.2	*			7.2	*			7.4	*		
20	7.7	*			7.1	*			7.6	*		
21	6.8	*			7.1	*			7.7	*		
22	7.4	*			7.3	*			7.7	*		
23	7.6	*			7.5	*			7.6	*		
24	7.3	*		*	7.5	*			7.8	*		
25	7.9	*			7.5	*			7.9	*		
26	7.8	*			7.1	*			7.7	*		
27	8.0	*			7.4	*			7.6	*		
28	7.9	*		*	7.6	*			7.9	*		
29	8.1	*							7.9	*		
30	7.8	*							7.6	*		
31	8.3	*							7.8	*		
MEANS	8.1		.0		7.5		.0		7.6		.0	
OBSVNS.	31		0		25		0		31		0	
MAXIMUM	9.3		.0		8.3		.0		7.9		.0	
MINIMUM	6.5		.0		6.7		.0		7.3		.0	
STD.DEV.	.64		.00		.41		.00		.18		.00	

CAPE ST JAMES 51 56.3 N 131 00.8 W

DATE	APRIL TEMP		SAL	MAY TEMP		SAL	JUNE TEMP		SAL	1982
1	7.4	*		7.7	*		9.7	*		
2	7.5	*		7.9	*		9.8	*		
3	6.8	*		7.9	*		9.8	*		
4	7.3	*		7.8	*		9.6	*		
5	7.9	*		8.4	*		9.8	*		
6	7.8	*		8.6	*		10.7	*		
7	8.1	*		8.6	*		9.9	*		
8	8.2	*		8.7	*		9.8	*		
9	8.0	*		8.7	*		10.0	*		
10	7.8	*		8.8	*		11.2	*		
11	7.9	*		9.0	*		10.0	*		
12	7.8	*		8.7	*		10.2	*		
13	7.8	*		9.1	*		10.4	*		
14	8.3	*		8.8	*		10.4	*		
15	7.8	*		9.9	*		10.3	*		
16	7.3	*		9.1	*		10.6	*		
17	7.2	*		8.7	*		11.8	*		
18	7.4	*		9.2	*		11.1	*		
19	7.9	*		9.1	*		11.2	*		
20	8.1	*		9.2	*		11.0	*		
21	7.9	*		8.7	*		11.1	*		
22	7.9	*		9.1	*		11.1	*		
23	7.8	*		9.1	*		11.8	*		
24	8.3	*		9.1	*		12.4	*		
25	8.6	*		9.1	*		11.4	*		
26	8.3	*		9.8	*		11.0	*		
27	8.3	*		9.3	*		12.3	*		
28	8.2	*		8.9	*		12.1	*		
29	8.2	*		9.6	*		12.2	*		
30	8.0	*		9.4	*		11.9	*		
31				9.4	*					
MEANS	7.9		.0	8.9		.0	10.8		.0	
OBSVNS.	30		0	31		0	30		0	
MAXIMUM	8.6		.0	9.9		.0	12.4		.0	
MINIMUM	6.8		.0	7.7		.0	9.6		.0	
STD.DEV.	.40		.00	.54		.00	.88		.00	

CAPE ST JAMES 51 56.3 N 131 00.8 W

DATE	JULY TEMP		SAL	AUGUST TEMP		SAL	SEPTEMBER 1982 TEMP		SAL
1	11.6	*		13.6	*		12.7	*	
2	12.9	*		13.6	*		14.1	*	
3	12.6	*		12.9	*		13.6	*	
4	12.2	*		13.7	*		13.0	*	
5	11.4	*		11.2	*		12.7	*	
6	11.3	*		12.9	*		12.3	*	
7	11.3	*		12.3	*		12.3	*	
8	11.1	*		12.6	*		12.0	*	
9	11.5	*		11.9	*		11.3	*	
10	11.7	*		12.6	*		11.2	*	
11	11.3	*		11.5	*		11.0	*	
12	11.3	*		11.7	*		11.8	*	
13	11.0	*		11.7	*		12.4	*	
14	10.0	*		11.8	*		12.8	*	
15	10.8	*		12.0	*		13.2	*	
16	11.6	*		12.1	*		12.7	*	
17	11.7	*		11.6	*		12.6	*	
18	11.4	*		11.9	*		12.2	*	
19	11.4	*		11.3	*		11.6	*	
20	11.7	*		11.7	*		11.9	*	
21	10.7	*		12.0	*		11.3	*	
22	11.7	*		11.3	*		11.9	*	
23	11.9	*		12.7	*		12.7	*	
24	12.9	*		13.4	*		12.5	*	
25	12.7	*		13.8	*		13.0	*	
26	12.8	*		13.1	*		12.5	*	
27	12.6	*		13.6	*		11.9	*	
28	12.6	*		13.4	*		11.7	*	
29	12.5	*		13.4	*		12.3	*	
30	13.2	*		13.3	*		12.4	*	
31	14.1	*		12.9	*				
MEANS	11.9		.0	12.5		.0	12.3		.0
OBSVNS.	31		0	31		0	30		0
MAXIMUM	14.1		.0	13.8		.0	14.1		.0
MINIMUM	10.0		.0	11.2		.0	11.0		.0
STD.DEV.	.86		.00	.84		.00	.70		.00

CAPE ST JAMES 51 56.3 N 131 00.8 W

DATE	OCTOBER TEMP		SAL	NOVEMBER TEMP		SAL	DECEMBER 1982 TEMP		SAL
1	11.6	*		9.2	*		8.6	*	
2	11.8	*		9.2	*		8.7	*	
3	11.6	*		9.2	*		8.5	*	
4	11.4	*		8.3	*		8.6	*	
5	11.0	*		8.4	*		8.9	*	
6	9.7	*		8.4	*		8.9	*	
7	10.9	*		8.9	*		8.8	*	
8	10.9	*		8.9	*		8.9	*	
9	10.4	*		8.9	*		8.8	*	
10	10.4	*		8.8	*		8.7	*	
11	10.7	*		9.0	*		8.9	*	
12	10.4	*		8.8	*		8.8	*	
13	10.1	*		9.1	*		8.7	*	
14	10.6	*		8.8	*		8.6	*	
15	11.1	*		8.7	*		8.4	*	
16	10.2	*		8.5	*		8.6	*	
17	10.2	*		8.4	*		8.7	*	
18	10.3	*		8.7	*		8.8	*	
19	10.1	*		8.5	*		8.8	*	
20	10.1	*		8.5	*		8.8	*	
21	10.1	*		8.5	*		8.9	*	
22	10.1	*		8.3	*		9.0	*	
23	9.7	*		8.2	*		8.9	*	
24	9.6	*		8.5	*		8.9	*	
25	9.7	*		8.8	*		8.9	*	
26	9.7	*		8.7	*		8.8	*	
27	9.7	*		9.0	*		8.8	*	
28	9.1	*		9.1	*		8.8	*	
29	9.2	*		8.9	*		8.7	*	
30	9.4	*		8.6	*		8.8	*	
31	9.2	*					8.9	*	
MEANS	10.3		.0	8.7		.0	8.8		.0
OBSVNS.	31		0	30		0	29		0
YRLY.MEANS							9.6		.0
MAXIMUM	11.8		.0	9.2		.0	9.0		.0
MINIMUM	9.1		.0	8.2		.0	8.4		.0
STD.DEV.	.73		.00	.29		.00	.14		.00

MCINNES ISLAND 52 15.8 N 128 43.2 W

	JANUARY		FEBRUARY		MARCH 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	7.4	30.0	7.2	30.8	6.1	31.2
2	7.2	30.0	7.0	30.8	6.1	31.0
3	6.7	30.0	6.7	29.8	6.0	30.8
4	6.7	30.0	6.3	29.5	5.9	30.4
5	7.1	30.0	6.4	29.8	5.9	30.0
6	7.6	30.3	6.2	29.5	5.9	29.8
7	7.8	30.3	6.2	29.5	5.9	30.2
8	8.1	31.0	6.2	29.8	6.3	30.2
9	7.9	31.0	6.3	30.0	6.7	30.0
10	7.8	31.2	6.6	30.4	6.7	30.3
11	7.7	30.8	7.0	31.4	6.8	30.3
12	7.7	30.8	6.9	31.2	6.8	30.3
13	7.7	30.6	6.8	31.0	6.9	30.3
14	7.3	30.4	6.3	31.0	7.2	30.3
15	7.1	30.6	6.4	31.0	7.1	30.3
16	7.1	30.6	6.7	30.7	6.7	30.0
17	7.1	30.4	* 6.8	* 30.7	6.3	30.0
18	6.7	30.0	* 6.9	* 30.8	6.5	29.8
19	6.4	29.8	7.0	30.8	6.1	29.9
20	* 6.2	* 29.8	6.8	30.8	6.3	30.0
21	* 5.9	* 29.8	6.7	31.0	6.4	29.9
22	5.7	29.8	6.4	31.0	6.5	30.0
23	*	*	6.2	31.0	6.6	30.0
24	*	*	6.3	31.0	6.7	30.2
25	*	*	6.2	31.0	6.7	30.2
26	*	*	6.2	31.1	7.0	30.2
27	*	*	6.2	31.0	7.2	30.3
28	6.4	30.2	6.1	31.0	7.4	30.3
29	6.9	31.1			7.4	30.3
30	7.0	31.1			7.4	30.3
31	6.8	30.6			7.1	30.0
MEANS	7.2	30.4	6.5	30.6	6.6	30.2
OBSVNS.	24	24	26	26	31	31
MAXIMUM	8.1	31.2	7.2	31.4	7.4	31.2
MINIMUM	5.7	29.8	6.1	29.5	5.9	29.8
STD.DEV.	.57	.44	.33	.60	.48	.31

MCINNES ISLAND 52 15.8 N 128 43.2 W

	APRIL		MAY		JUNE		1982
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL	
1	6.9	30.6	7.9	30.8	*	*	
2	6.9	30.3	7.7	31.2	*	*	
3	6.9	30.0	7.6	31.2	*	*	
4	6.4	29.8	7.9	31.2	*	*	
5	6.8	30.0	7.8	31.2	10.3	30.7	
6	7.1	30.0	8.0	31.0	10.4	30.7	
7	* 7.3	* 30.0	8.0	30.6	10.6	30.7	
8	* 7.4	* 30.1	8.0	30.4	10.5	30.7	
9	7.6	30.2	8.9	30.2	10.4	30.6	
10	7.7	30.2	8.6	30.3	10.3	30.4	
11	7.9	30.6	8.6	30.2	10.5	30.4	
12	7.8	30.4	8.9	30.4	10.7	30.4	
13	7.8	30.4	9.3	30.6	10.9	30.4	
14	7.6	30.6	9.4	30.4	11.6	30.4	
15	7.7	30.6	9.7	30.4	11.6	30.4	
16	7.6	30.6	9.0	30.6	11.7	30.4	
17	7.8	30.7	8.9	30.4	11.9	30.6	
18	7.7	30.6	8.9	31.0	11.9	30.2	
19	7.7	30.6	8.6	31.0	11.9	30.3	
20	7.8	30.6	8.6	30.7	12.1	31.1	
21	7.7	30.6	8.9	30.7	11.3	30.3	
22	7.6	30.3	9.0	30.8	11.4	30.3	
23	7.7	30.3	8.9	30.8	11.3	30.3	
24	7.9	30.6	9.1	31.0	11.3	30.3	
25	8.2	30.4	9.3	30.7	11.1	30.4	
26	8.2	30.6	9.4	30.4	11.3	30.0	
27	8.2	30.6	9.8	30.6	11.8	29.9	
28	8.2	30.8	9.8	30.4	11.8	30.0	
29	8.2	30.8	9.9	29.9	11.7	30.2	
30	8.0	30.8	9.8	29.9	11.7	30.0	
31			*	*			
MEANS	7.6	30.4	8.8	30.6	11.2	30.4	
OBSVNS.	28	28	30	30	26	26	
MAXIMUM	8.2	30.8	9.9	31.2	12.1	31.1	
MINIMUM	6.4	29.8	7.6	29.9	10.3	29.9	
STD.DEV.	.48	.27	.69	.37	.59	.27	

MCINNES ISLAND 52 15.8 N 128 43.2 W

	JULY		AUGUST		SEPTEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	12.2	30.2	12.9	30.4	12.7	31.4
2	12.6	30.3	12.8	30.6	12.7	31.2
3	12.4	30.0	12.9	30.6	12.8	31.2
4	13.6	29.8	13.4	30.4	13.0	30.8
5	12.6	30.3	13.6	30.4	13.6	31.0
6	13.1	30.6	14.1	30.8	12.9	30.7
7	12.6	30.6	14.1	30.8	12.6	30.8
8	12.6	30.6	14.2	30.6	13.2	31.0
9	12.6	30.7	14.4	30.6	13.2	31.1
10	12.9	30.2	14.9	30.7	13.1	31.4
11	13.4	29.9	14.4	30.6	13.1	31.4
12	13.9	29.7	14.4	30.6	13.1	30.7
13	14.1	29.9	14.2	30.8	13.1	29.3
14	13.8	29.8	14.4	30.8	13.6	25.9
15	13.8	30.0	14.3	30.8	13.7	27.2
16	13.6	30.3	14.4	30.7	14.0	26.1
17	13.4	30.3	14.6	30.8	13.7	28.0
18	13.1	30.4	14.8	31.5	13.6	28.2
19	13.1	30.4	14.8	30.6	13.2	27.3
20	12.9	30.3	13.9	30.3	13.1	27.8
21	12.6	30.0	13.1	30.7	13.0	29.8
22	12.8	30.2	13.3	30.6	13.0	30.3
23	12.8	30.2	13.2	30.7	13.1	30.0
24	12.9	30.3	12.9	30.6	12.9	29.0
25	12.8	30.4	12.3	31.1	13.0	29.7
26	13.2	30.2	12.3	31.1	13.0	28.8
27	13.4	30.3	12.6	31.1	12.7	29.5
28	13.0	30.6	12.1	31.5	11.3	28.9
29	13.0	30.6	12.8	30.7	12.0	29.8
30	12.9	30.6	12.0	30.8	11.9	29.9
31	12.9	30.6	12.3	30.8		
MEANS	13.1	30.3	13.6	30.7	13.0	29.6
OBSVNS.	31	31	31	31	30	30
MAXIMUM	14.1	30.7	14.9	31.5	14.0	31.4
MINIMUM	12.2	29.7	12.0	30.3	11.3	25.9
STD.DEV.	.47	.28	.91	.28	.55	1.59

MCINNES ISLAND 52 15.8 N 128 43.2 W

DATE	OCTOBER TEMP	OCTOBER SAL	NOVEMBER TEMP	NOVEMBER SAL	DECEMBER 1982 TEMP	DECEMBER 1982 SAL
1	11.9	29.9	9.3	30.0	7.7	30.2
2	11.9	29.7	8.9	29.7	7.8	30.2
3	11.4	29.8	9.1	29.8	8.0	30.2
4	11.1	30.4	9.2	30.0	7.7	30.3
5	11.3	30.4	9.3	30.7	7.4	30.7
6	11.7	30.8	9.2	30.7	7.3	30.3
7	11.6	30.8	9.1	30.6	7.0	30.2
8	11.2	31.1	9.1	30.4	7.2	30.3
9	11.0	31.5	8.9	29.0	7.6	30.6
10	11.0	31.2	8.6	28.8	7.2	30.3
11	11.0	30.4	7.9	28.2	7.1	30.3
12	11.0	29.4	7.9	28.6	7.7	30.4
13	11.2	29.4	8.0	29.1	7.8	30.4
14	11.7	29.1	8.4	29.7	8.0	30.7
15	11.4	28.9	9.1	30.6	8.1	30.6
16	11.0	29.0	9.0	31.2	8.1	30.3
17	10.7	29.5	8.8	30.4	8.1	30.4
18	10.6	28.9	8.8	30.6	8.5	31.0
19	10.4	28.4	8.2	30.6	8.1	30.6
20	10.6	29.1	7.8	29.5	7.7	30.7
21	10.3	29.9	7.0	29.3	8.4	31.0
22	10.2	30.6	7.1	29.3	7.9	30.7
23	10.2	31.2	7.3	29.5	7.9	30.8
24	10.1	31.8	7.2	29.9	* 7.7	* 30.6
25	9.8	31.4	7.4	29.7	* 7.4	* 30.5
26	9.4	30.8	7.6	29.7	7.2	30.3
27	9.4	30.7	7.9	30.0	7.2	30.4
28	9.4	30.7	8.0	30.0	7.2	30.6
29	9.4	30.7	8.0	30.2	7.0	30.2
30	9.4	30.8	7.4	30.2	6.8	30.3
31	9.4	30.7			6.8	29.4
MEANS	10.7	30.2	8.3	29.9	7.6	30.4
OBSVNS.	31	31	30	30	29	29
YRLY.MEANS					9.6	30.3
MAXIMUM	11.9	31.8	9.3	31.2	8.5	31.0
MINIMUM	9.4	28.4	7.0	28.2	6.8	29.4
STD.DEV.	.82	.90	.75	.70	.47	.31

EGG ISLAND 51 15.1 N 127 49.9 W

DATE	JANUARY TEMP	JANUARY SAL	FEBRUARY TEMP	FEBRUARY SAL	MARCH 1982 TEMP	MARCH 1982 SAL
1	7.6	31.6	7.3	31.0	7.2	31.4
2	7.7	30.8	7.2	30.3	7.1	31.4
3	7.2	30.7	7.2	30.6	7.2	31.4
4	7.1	31.1	7.2	30.7	6.7	31.6
5	7.1	30.7	6.8	30.7	6.7	31.4
6	7.2	30.7	6.9	30.7	6.8	32.0
7	5.7	30.2	7.0	30.6	7.1	32.1
8	7.4	31.0	6.7	30.6	7.2	31.8
9	7.7	31.1	6.8	31.0	7.2	32.1
10	7.7	31.0	6.8	31.1	* 7.2	* 32.0
11	7.7	31.4	6.9	32.0	7.2	31.9
12	7.7	30.8	7.0	31.5	7.2	31.0
13	7.8	31.5	7.0	31.4	7.2	31.5
14	7.8	31.1	7.1	31.8	7.2	32.3
15	7.7	31.0	7.2	30.8	7.2	31.5
16	7.7	30.8	7.6	31.0	7.2	31.6
17	7.3	30.8	7.2	32.1	7.2	32.4
18	* 7.3	* 30.7	7.1	31.4	6.1	30.8
19	7.2	30.6	7.4	30.7	7.1	31.4
20	6.4	29.8	7.4	31.4	7.2	31.2
21	7.1	31.8	7.2	30.8	7.4	30.8
22	6.5	30.7	7.1	30.7	7.4	30.8
23	7.0	30.6	7.0	32.0	7.3	32.3
24	7.2	30.6	6.8	30.7	7.6	31.5
25	7.2	31.6	7.1	31.4	7.5	32.0
26	7.1	31.2	7.2	31.4	7.6	32.1
27	7.1	30.8	6.8	31.2	7.4	31.9
28	7.2	31.1	7.1	31.9	7.4	31.1
29	7.6	31.1			7.4	31.1
30	7.4	30.8			7.6	32.0
31	7.4	31.0			7.4	32.0
MEANS	7.3	30.9	7.1	31.1	7.2	31.6
OBSVNS.	30	30	28	28	30	30
MAXIMUM	7.8	31.8	7.6	32.1	7.6	32.4
MINIMUM	5.7	29.8	6.7	30.3	6.1	30.8
STD.DEV.	.46	.41	.22	.51	.31	.47

EGG ISLAND 51 15.1 N 127 49.9 W

DATE	APRIL TEMP	APRIL SAL	MAY TEMP	MAY SAL	JUNE TEMP	JUNE SAL
1	7.4	32.0	8.2	31.8	10.4	28.8
2	7.2	31.5	8.2	31.4	11.3	29.4
3	7.4	32.1	8.2	31.5	12.0	28.8
4	7.7	31.2	8.3	31.4	12.8	24.7
5	7.7	31.1	8.9	31.9	12.8	30.8
6	7.8	31.6	8.7	31.4	11.4	28.9
7	7.8	31.2	8.8	31.2	12.1	29.0
8	7.9	31.5	8.8	31.5	11.5	28.9
9	7.8	32.0	9.1	31.1	12.1	29.1
10	8.3	32.1	9.3	31.6	13.2	28.0
11	8.5	31.9	8.9	30.6	13.3	26.9
12	8.2	31.1	10.2	30.4	* 13.3	* 26.2
13	8.2	31.6	9.4	31.0	13.2	25.4
14	8.0	31.9	10.2	31.1	10.6	28.9
15	7.8	31.4	9.4	30.4	12.2	27.6
16	7.8	31.4	9.9	30.2	13.3	27.2
17	7.9	31.2	8.9	31.5	11.4	30.0
18	* 8.0	* 31.6	9.4	31.4	11.6	29.5
19	8.2	32.1	9.4	32.0	13.6	25.6
20	8.6	31.6	9.4	31.5	12.6	27.7
21	8.7	31.2	9.6	31.4	11.6	29.4
22	8.7	32.3	9.6	32.3	12.8	27.7
23	6.9	31.4	9.6	31.9	12.2	29.9
24	* 8.9	* 31.6	9.2	31.9	12.9	29.3
25	8.8	31.8	9.4	31.9	15.0	26.5
26	8.8	32.3	9.6	31.5	12.2	28.5
27	8.3	31.4	10.6	28.9	12.3	29.3
28	8.3	32.4	10.0	31.4	15.0	25.1
29	8.2	32.0	10.4	29.3	13.5	26.8
30	8.2	31.9	10.9	28.9	11.7	28.6
31			9.9	29.7		
MEANS	8.1	31.7	9.4	31.1	12.4	28.1
OBSVNS.	28	28	31	31	29	29
MAXIMUM	8.9	32.4	10.9	32.3	15.0	30.8
MINIMUM	7.2	31.1	8.2	28.9	10.4	24.7
STD.DEV.	.45	.40	.70	.89	1.09	1.57

EGG ISLAND 51 15.1 N 127 49.9 W

	JULY		AUGUST		SEPTEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	12.6	28.6	13.9	27.2	10.5	32.0
2	13.2	29.0	13.3	29.4	11.3	31.9
3	13.9	28.1	13.6	16.3	11.0	31.8
4	13.9	28.6	13.6	28.8	11.1	31.6
5	12.6	29.8	14.1	30.7	10.9	31.6
6	10.6	31.1	13.3	30.2	10.0	31.6
7	11.2	30.8	11.4	31.1	10.2	31.4
8	11.1	31.2	12.9	28.4	10.6	31.2
9	10.8	31.0	12.3	30.0	10.1	31.2
10	12.0	30.4	12.1	31.0	10.0	31.2
11	11.4	30.7	13.2	31.2	10.0	31.8
12	12.4	30.7	11.4	32.3	9.9	30.8
13	11.6	30.6	12.2	31.0	11.0	28.8
14	11.4	30.4	11.1	31.4	10.5	30.4
15	11.1	30.7	12.0	31.9	10.6	30.7
16	11.6	28.6	12.2	31.5	10.6	30.8
17	11.7	29.8	12.3	31.8	11.8	30.3
18	11.7	30.8	12.3	31.1	10.7	31.1
19	12.7	29.4	12.2	31.4	11.0	31.2
20	13.2	29.0	12.7	30.6	10.7	31.1
21	12.2	30.7	12.1	31.6	11.1	30.8
22	12.3	30.0	11.7	31.9	10.7	30.4
23	13.2	29.9	11.3	32.0	11.0	31.0
24	12.6	29.8	11.8	32.0	11.6	30.6
25	* 13.8	* 29.7	12.2	32.0	11.4	30.2
26	15.0	29.5	12.2	31.4	11.4	30.8
27	17.2	25.9	* 12.4	* 31.4	11.1	30.4
28	16.0	25.5	12.6	31.5	10.0	31.1
29	15.6	24.3	12.1	31.4	10.0	31.8
30	13.7	26.9	10.8	31.8	10.0	31.4
31	14.2	25.8	11.5	31.2		
MEANS	12.8	29.3	12.3	30.5	10.7	31.0
OBSVNS.	30	30	30	30	30	30
MAXIMUM	17.2	31.2	14.1	32.3	11.8	32.0
MINIMUM	10.6	24.3	10.8	16.3	9.9	28.8
STD.DEV.	1.62	1.86	.84	2.92	.54	.66

EGG ISLAND 51 15.1 N 127 49.9 W

	OCTOBER		NOVEMBER		DECEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	10.0	31.8	9.4	32.1	8.9	32.0
2	10.1	31.2	9.3	31.2	8.7	31.9
3	10.0	31.6	9.2	32.3	8.6	31.5
4	9.8	31.5	9.4	32.5	8.7	31.8
5	9.6	31.8	9.3	31.5	8.4	31.2
6	9.4	31.8	9.3	31.5	8.3	31.1
7	9.4	31.9	9.3	31.4	8.1	30.8
8	* 9.4	* 31.9	8.8	31.8	8.3	30.6
9	9.5	31.8	8.7	31.0	8.3	30.8
10	9.7	32.0	8.4	31.1	8.2	31.0
11	9.5	31.5	8.7	31.4	8.2	31.8
12	9.6	31.2	8.7	31.6	8.4	31.6
13	9.5	31.8	8.8	32.0	8.4	31.1
14	9.6	31.8	8.6	31.1	8.5	31.2
15	9.7	32.8	8.7	31.4	8.7	31.0
16	9.5	31.8	8.9	31.5	8.8	31.2
17	9.4	31.6	8.8	31.5	8.6	31.2
18	9.3	31.5	* 8.7	** 33.3	8.3	30.0
19	9.3	31.5	8.6	32.0	8.3	31.2
20	9.3	32.1	8.5	32.3	8.2	31.6
21	9.3	32.0	8.3	31.9	8.3	31.8
22	9.3	31.8	8.1	31.6	8.4	31.4
23	9.3	32.1	8.3	31.6	8.2	31.1
24	9.4	31.5	8.2	31.6	8.2	30.7
25	9.4	32.7	8.3	31.6	8.3	31.2
26	9.4	32.5	8.6	32.4	8.0	31.0
27	9.6	31.2	8.3	31.5	7.8	30.8
28	9.0	29.3	8.9	31.9	7.8	30.6
29	9.1	31.6	8.9	31.8	7.8	31.2
30	9.3	31.0	8.8	31.0	7.8	31.8
31	9.4	31.0			7.8	31.6
MEANS	9.5	31.7	8.8	31.7	8.3	31.2
OBSVNS.	30	30	29	29	31	31
YRLY.MEANS.....					9.5	30.8
MAXIMUM	10.1	32.8	9.4	32.5	8.9	32.0
MINIMUM	9.0	29.3	8.1	31.0	7.8	30.0
STD.DEV.	.25	.62	.38	.41	.30	.45

PINE ISLAND 50 58.5 N 127 43.6 W

DATE	JANUARY TEMP	JANUARY SAL	FEBRUARY TEMP	FEBRUARY SAL	MARCH 1982 TEMP	MARCH 1982 SAL
1	7.5	31.2	7.2	31.5	7.3	31.0
2	7.4	31.2	7.6	31.5	7.2	30.7
3	7.2	31.4	7.4	31.2	7.2	31.2
4	7.0	31.2	7.0	31.2	7.1	31.0
5	6.2	31.4	7.0	30.8	7.0	31.2
6	6.2	31.0	7.0	31.0	7.2	31.4
7	6.2	29.8	7.1	31.0	7.2	31.1
8	7.4	31.1	7.2	30.8	7.2	31.6
9	7.5	31.2	7.0	31.4	7.4	31.4
10	7.6	31.0	6.8	31.2	7.1	31.4
11	8.0	31.1	6.9	30.8	7.3	31.1
12	7.8	31.4	7.1	31.1	7.6	31.6
13	7.9	31.1	7.2	31.1	7.4	31.5
14	8.0	31.4	7.2	30.8	7.5	31.0
15	7.8	31.1	7.3	30.4	7.5	30.8
16	7.7	31.1	7.2	30.3	7.7	31.0
17	7.5	31.2	7.0	30.6	7.4	31.0
18	7.8	31.2	7.1	30.3	7.3	31.2
19	7.7	31.2	7.0	30.6	7.1	30.7
20	7.0	31.4	7.1	30.7	7.2	31.2
21	6.5	31.2	6.7	31.1	7.2	30.8
22	6.0	31.4	6.7	30.7	7.3	31.2
23	6.4	31.0	6.6	31.0	7.5	31.5
24	7.2	31.2	* 6.6	* 31.0	7.5	31.5
25	7.0	31.2	6.6	31.0	7.5	31.2
26	7.1	31.9	7.0	30.8	7.8	31.5
27	7.1	31.6	6.7	30.8	7.5	31.2
28	7.0	31.5	6.9	31.0	7.5	31.6
29	7.2	31.5			7.6	31.6
30	7.1	31.9			7.4	31.8
31	7.2	31.5			7.3	31.6
MEANS	7.2	31.2	7.0	30.9	7.4	31.2
OBSVNS.	31	31	27	27	31	31
MAXIMUM	8.0	31.9	7.6	31.5	7.8	31.8
MINIMUM	6.0	29.8	6.6	30.3	7.0	30.7
STD.DEV.	.57	.35	.24	.32	.19	.30

PINE ISLAND 50 58.5 N 127 43.6 W

	APRIL		MAY		JUNE		1982
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL	
1	7.3	31.6	8.2	31.6	8.9	31.9	
2	7.7	31.5	8.2	31.9	9.0	31.8	
3	7.6	31.6	8.2	31.8	9.0	31.8	
4	7.6	31.2	8.3	31.8	9.0	31.8	
5	7.9	31.4	8.4	32.0	9.0	31.9	
6	8.0	31.6	8.3	32.0	9.1	31.2	
7	8.1	31.5	8.3	32.1	9.5	31.6	
8	8.1	31.9	8.4	31.9	9.8	31.6	
9	7.8	31.9	8.6	31.9	10.0	31.8	
10	7.9	31.8	8.8	31.6	9.8	31.6	
11	8.0	31.4	8.4	31.8	9.7	31.9	
12	7.4	31.9	8.7	31.5	9.2	31.5	
13	7.5	31.9	8.7	31.2	9.5	31.9	
14	7.7	31.6	8.6	31.5	9.6	31.5	
15	7.8	31.6	9.0	31.1	9.8	31.8	
16	7.9	31.4	8.8	31.8	9.9	32.0	
17	7.9	31.5	8.7	31.6	9.9	31.9	
18	8.0	31.5	8.6	31.4	10.0	31.9	
19	7.9	31.8	8.6	31.5	9.7	32.0	
20	8.0	31.4	8.5	31.8	9.4	32.3	
21	8.1	31.8	8.5	31.6	9.6	32.4	
22	7.8	31.6	8.7	31.9	9.9	32.1	
23	8.1	31.6	8.3	31.8	10.1	32.0	
24	8.1	31.6	8.3	31.8	10.1	32.1	
25	8.2	31.9	8.4	32.3	10.0	32.3	
26	8.4	31.6	8.6	32.1	9.7	31.8	
27	8.1	31.9	8.7	32.5	10.0	32.0	
28	8.0	31.5	9.0	32.3	9.9	31.8	
29	7.8	31.2	8.8	32.1	9.6	31.9	
30	8.0	31.9	8.8	32.0	9.7	31.8	
31			8.8	31.9			
MEANS	7.9	31.6	8.6	31.8	9.6	31.9	
OBSVNS.	30	30	31	31	30	30	
MAXIMUM	8.4	31.9	9.0	32.5	10.1	32.4	
MINIMUM	7.3	31.2	8.2	31.1	8.9	31.2	
STD.DEV.	.24	.21	.23	.31	.37	.25	

PINE ISLAND 50 58.5 N 127 43.6 W

	JULY		AUGUST		SEPTEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	9.9	31.6	11.1	31.6	10.1	31.6
2	10.2	31.2	10.8	32.1	9.9	31.8
3	10.0	31.6	10.5	32.0	10.0	31.6
4	10.5	31.5	10.5	31.6	10.1	31.5
5	10.6	31.5	9.8	31.9	9.8	32.1
6	10.0	31.6	10.1	31.8	9.7	31.8
7	10.2	31.8	10.0	31.8	9.5	31.6
8	10.0	31.5	10.1	31.9	9.4	32.1
9	10.1	32.0	10.2	32.1	10.1	32.1
10	10.8	31.9	11.0	31.4	10.0	31.9
11	10.8	32.0	10.0	31.5	10.0	31.6
12	10.9	31.8	9.8	31.4	10.1	31.6
13	10.4	31.6	10.4	31.2	10.1	31.5
14	10.2	31.8	10.7	31.6	9.9	31.5
15	10.1	31.6	10.9	31.5	9.9	31.5
16	10.3	31.6	10.9	31.0	10.0	31.6
17	10.0	32.0	10.5	31.5	10.0	31.8
18	10.0	31.9	10.6	31.4	10.3	32.0
19	9.8	31.9	10.3	31.8	9.8	32.1
20	9.9	32.1	10.1	31.9	9.4	31.8
21	9.9	32.0	10.0	32.0	9.6	32.0
22	10.0	31.9	10.0	32.4	9.7	31.8
23	10.0	32.1	9.8	32.3	10.0	31.8
24	10.1	32.1	10.1	32.3	9.8	31.6
25	10.1	32.1	10.1	32.1	9.8	31.2
26	10.4	32.1	10.0	32.1	9.8	31.5
27	10.5	32.1	10.2	31.9	9.8	31.9
28	10.3	32.0	9.9	32.0	9.5	32.1
29	10.5	31.9	9.9	32.1	9.6	31.9
30	10.5	31.9	10.1	31.5	9.5	31.8
31	10.5	31.6	9.7	31.6		
MEANS	10.2	31.8	10.3	31.8	9.8	31.8
OBSVNS.	31	31	31	31	30	30
MAXIMUM	10.9	32.1	11.1	32.4	10.3	32.1
MINIMUM	9.8	31.2	9.7	31.0	9.4	31.2
STD.DEV.	.30	.24	.39	.34	.24	.23

PINE ISLAND 50 58.5 N 127 43.6 W

	OCTOBER		NOVEMBER		DECEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	9.5	31.4	9.4	31.2	* 8.5	* 30.9
2	9.4	31.5	9.5	31.2	* 8.6	* 31.1
3	9.0	31.5	* 9.5	* 31.1	8.8	31.2
4	9.0	31.6	9.4	31.0	8.5	31.5
5	8.8	31.6	9.4	31.0	8.4	31.5
6	8.7	31.6	9.5	31.4	8.5	31.4
7	8.9	31.9	9.3	31.1	8.5	31.6
8	8.8	31.9	9.3	31.1	8.3	31.4
9	9.0	31.8	9.2	31.0	8.1	31.4
10	9.1	31.8	9.3	31.1	7.9	31.5
11	9.7	31.9	9.4	31.0	7.9	31.1
12	9.5	32.0	9.3	31.0	8.0	31.2
13	9.5	31.9	9.2	30.7	8.0	31.1
14	9.4	31.8	9.3	30.7	* 8.0	* 31.1
15	9.4	31.6	9.2	30.8	8.1	31.2
16	9.1	31.6	9.4	31.0	8.9	31.2
17	9.1	32.0	9.6	31.1	8.8	31.2
18	9.3	31.8	9.4	31.1	9.0	31.1
19	9.2	32.1	9.4	31.0	8.8	31.1
20	9.2	32.0	9.2	31.0	8.6	31.2
21	* 9.0	* 31.7	8.8	31.1	7.9	31.1
22	8.7	31.4	8.7	31.1	8.1	31.0
23	8.8	31.4	8.7	31.1	7.9	31.1
24	10.2	31.1	8.8	31.1	7.7	31.0
25	9.9	31.1	*	*	7.7	30.8
26	9.8	31.4	*	*	8.0	31.0
27	9.7	31.4	*	*	7.9	31.0
28	10.0	31.0	8.4	30.7	7.9	31.2
29	9.8	31.5	8.3	30.6	8.1	31.0
30	9.8	31.1	8.3	30.8	8.2	31.0
31	9.4	31.0			8.1	31.0
MEANS	9.3	31.6	9.1	31.0	8.2	31.2
OBSVNS.	30	30	26	26	28	28
YRLY.MEANS					8.7	31.5
MAXIMUM	10.2	32.1	9.6	31.4	9.0	31.6
MINIMUM	8.7	31.0	8.3	30.6	7.7	30.8
STD.DEV.	.41	.32	.38	.18	.38	.20

KAINS ISLAND 50 26.6 N 128 01.8 W

DATE	JANUARY TEMP	JANUARY SAL	FEBRUARY TEMP	FEBRUARY SAL	MARCH TEMP	MARCH SAL
						1982
1	7.3	28.6	8.1	26.8	7.5	28.1
2	6.9	28.9	8.2	27.1	7.4	27.7
3	6.4	28.9	8.0	27.7	7.6	27.4
4	5.9	29.0	7.8	27.6	7.8	27.6
5	5.7	29.0	7.8	27.8	7.6	27.1
6	7.8	29.4	7.6	28.1	7.4	26.9
7	7.9	29.8	7.1	28.2	7.4	28.0
8	8.1	29.5	7.2	28.4	7.5	28.0
9	7.7	28.4	7.0	28.5	7.8	28.4
10	7.7	27.1	7.0	28.6	7.8	28.4
11	7.4	27.4	7.2	28.6	7.4	28.4
12	7.6	27.4	7.3	28.5	7.4	28.4
13	8.5	27.8	7.2	28.4	7.7	29.0
14	8.4	27.6	6.6	28.0	7.8	28.4
15	8.7	27.4	7.7	29.1	7.9	28.1
16	8.1	27.3	7.3	28.2	7.7	28.1
17	7.7	27.1	7.4	28.5	7.9	28.6
18	7.7	27.3	7.4	28.6	8.0	28.1
19	7.8	27.6	7.7	28.4	7.8	28.1
20	6.9	27.4	7.0	27.2	7.4	28.4
21	6.3	28.9	7.0	26.9	7.8	28.6
22	7.0	28.9	6.7	27.2	8.0	28.6
23	7.6	28.9	6.8	27.4	8.0	28.9
24	7.8	29.4	7.2	28.0	8.2	29.1
25	7.9	28.6	6.9	28.0	8.1	29.4
26	7.2	26.9	6.9	25.9	8.0	29.4
27	7.1	28.0	6.9	26.4	7.9	29.1
28	7.0	28.5	7.1	25.8	7.6	28.6
29	8.0	28.9			8.0	29.0
30	7.8	29.4			7.9	29.3
31	7.8	28.8			8.0	29.5
MEANS	7.5	28.3	7.3	27.8	7.8	28.4
OBSVNS.	31	31	28	28	31	31
MAXIMUM	8.7	29.8	8.2	29.1	8.2	29.5
MINIMUM	5.7	26.9	6.6	25.8	7.4	26.9
STD.DEV.	.71	.86	.43	.85	.24	.66

KAINS ISLAND 50 26.6 N 128 01.8 W

DATE	APRIL TEMP	APRIL SAL	MAY TEMP	MAY SAL	JUNE TEMP	JUNE SAL
1	8.0	28.4	9.4	28.9	10.1	31.0
2	8.1	28.2	9.4	28.2	11.9	30.3
3	8.3	28.6	9.2	28.0	11.7	30.3
4	8.3	28.8	9.2	27.4	11.1	30.4
5	8.3	28.8	9.4	28.6	10.9	30.4
6	8.3	29.0	9.3	28.4	11.0	30.3
7	8.3	29.1	9.6	28.9	11.5	30.7
8	8.9	29.4	9.4	29.4	10.9	30.8
9	8.7	29.5	9.6	29.7	11.8	30.8
10	8.5	29.5	9.9	29.5	12.2	30.6
11	8.3	29.3	9.8	29.4	12.7	30.6
12	8.3	29.8	9.8	29.7	13.3	30.6
13	8.2	29.5	9.7	29.8	11.1	31.1
14	8.1	29.3	9.6	29.8	12.0	31.1
15	8.2	29.1	9.6	29.9	13.1	30.6
16	8.3	29.0	9.7	30.2	11.9	30.3
17	8.2	28.5	9.5	30.4	13.9	30.7
18	8.1	28.2	9.4	30.2	12.1	30.7
19	8.1	27.8	10.0	30.0	11.4	31.2
20	8.3	28.6	10.1	29.7	11.7	31.1
21	*	*	10.4	29.3	11.6	31.2
22	*	*	10.5	29.4	11.3	31.5
23	*	*	9.8	29.7	11.3	31.5
24	9.0	28.8	10.2	29.7	12.1	31.6
25	9.1	29.3	10.2	29.7	11.6	31.6
26	9.2	29.5	10.0	30.2	11.3	31.8
27	9.0	29.5	10.5	30.2	11.6	31.8
28	9.4	29.4	10.7	30.3	12.1	31.6
29	9.3	29.5	10.9	30.0	12.8	31.8
30	9.4	29.5	10.8	30.0	12.3	31.4
31			11.1	30.3		
MEANS	8.5	29.0	9.9	29.5	11.8	31.0
OBSVNS.	27	27	31	31	30	30
MAXIMUM	9.4	29.8	11.1	30.4	13.9	31.8
MINIMUM	8.0	27.8	9.2	27.4	10.1	30.3
STD.DEV.	.45	.51	.53	.74	.79	.51

KAINS ISLAND 50 26.6 N 128 01.8 W

DATE	JULY TEMP	JULY SAL	AUGUST TEMP	AUGUST SAL	SEPTEMBER 1982 TEMP	SEPTEMBER 1982 SAL
1	12.6	31.4	14.1	31.8	12.9	31.8
2	12.2	31.6	13.7	31.5	13.4	31.6
3	12.4	31.6	13.8	31.8	13.3	31.4
4	12.8	31.5	13.2	31.5	13.4	31.4
5	13.1	31.5	12.8	31.5	13.3	31.1
6	12.8	31.2	13.4	31.9	13.6	30.8
7	12.9	31.2	13.9	31.5	13.6	30.8
8	13.1	30.7	14.9	31.2	13.7	30.6
9	12.9	30.7	13.9	31.0	13.9	29.9
10	13.0	31.5	13.3	31.1	13.9	29.1
11	13.4	31.0	12.9	30.7	14.1	28.6
12	13.9	31.1	12.9	30.7	14.1	28.6
13	14.0	31.0	13.3	30.8	13.5	28.0
14	13.6	31.0	13.3	31.6	13.3	28.2
15	13.4	31.0	14.0	31.2	13.7	28.8
16	12.7	31.1	13.9	31.0	13.6	29.3
17	12.6	31.1	14.3	30.8	13.6	30.3
18	12.8	31.1	14.2	31.0	13.7	30.6
19	12.2	31.5	13.9	31.5	14.2	30.2
20	12.0	31.4	13.9	31.2	13.9	30.7
21	11.9	31.8	13.6	31.4	13.6	30.8
22	11.7	31.5	13.4	31.4	13.9	31.0
23	11.8	31.6	13.3	31.1	13.9	30.7
24	12.8	31.6	13.1	31.2	12.2	31.1
25	13.0	31.5	13.6	31.6	12.9	31.5
26	12.4	31.4	12.8	31.8	13.1	31.0
27	12.3	31.6	12.1	31.6	13.1	31.0
28	12.2	31.4	12.2	31.4	12.4	30.8
29	12.8	31.5	12.5	31.6	12.4	30.8
30	13.7	31.8	12.5	31.4	11.9	31.1
31	13.5	31.6	13.1	31.5		
MEANS	12.8	31.3	13.4	31.3	13.4	30.4
OBSVNS.	31	31	31	31	30	30
MAXIMUM	14.0	31.8	14.9	31.9	14.2	31.8
MINIMUM	11.7	30.7	12.1	30.7	11.9	28.0
STD.DEV.	.61	.29	.64	.33	.58	1.07

KAINS ISLAND 50 26.6 N 128 01.8 W

	OCTOBER		NOVEMBER		DECEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	12.2	30.8	9.7	27.1	8.9	28.8
2	11.9	30.7	9.8	27.3	9.2	29.3
3	11.7	30.7	10.3	28.6	8.8	29.0
4	11.9	30.6	10.3	29.1	9.0	28.5
5	12.2	31.4	9.7	27.1	8.4	28.1
6	11.6	30.7	9.6	26.8	8.6	28.8
7	11.9	30.6	9.6	26.8	8.5	29.0
8	11.4	30.4	9.1	26.7	8.6	29.0
9	11.9	30.0	9.2	28.0	8.4	29.1
10	11.9	30.8	9.3	28.0	8.2	29.4
11	12.1	30.7	9.3	28.0	8.7	29.5
12	11.4	30.6	9.1	28.2	9.0	29.4
13	11.5	30.4	8.9	28.8	8.6	29.4
14	11.7	30.6	9.0	29.3	6.2	29.4
15	12.1	30.6	9.3	29.1	8.3	29.7
16	11.1	30.7	9.7	29.3	9.4	29.8
17	11.0	31.1	9.8	29.4	8.7	28.6
18	10.5	31.1	8.9	29.0	8.5	28.9
19	10.4	30.8	8.9	29.0	9.2	29.8
20	10.6	31.0	8.6	29.1	8.9	29.3
21	10.8	30.8	8.5	29.5	8.1	28.2
22	10.8	30.8	8.2	29.4	8.0	28.0
23	11.0	30.7	8.4	29.4	8.1	28.1
24	11.1	30.6	8.7	29.7	8.9	28.9
25	11.1	29.8	8.9	29.7	9.2	29.4
26	10.7	26.8	8.9	29.8	7.9	27.3
27	10.9	26.4	9.2	29.8	7.7	26.8
28	10.0	25.9	9.0	28.5	7.6	27.1
29	9.2	24.3	8.7	28.2	7.4	27.8
30	10.4	27.6	8.6	28.2	7.4	28.0
31	10.5	27.8			7.8	28.4
MEANS	11.2	29.9	9.2	28.6	8.4	28.7
OBSVNS.	31	31	30	30	31	31
YRLY.MEANS					10.1	29.5
MAXIMUM	12.2	31.4	10.3	29.8	9.4	29.8
MINIMUM	9.2	24.3	8.2	26.7	6.2	26.8
STD.DEV.	.72	1.79	.53	.98	.68	.79

AMPHITRITE POINT 48 55.3 N 125 32.3 W

	JANUARY		FEBRUARY		MARCH	1982
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	7.3	27.4	7.8	27.3	8.1	28.2
2	7.5	28.5	7.8	26.5	8.0	27.3
3	* 7.3	* 28.9	7.2	26.8	7.8	27.6
4	* 7.1	* 29.3	7.4	27.2	7.3	26.8
5	6.9	29.7	7.3	27.3	7.6	26.4
6	6.4	28.9	7.4	27.3	7.7	26.9
7	7.2	28.1	6.9	25.6	7.4	26.9
8	8.2	29.3	7.0	26.3	8.1	26.7
9	8.3	29.4	6.1	25.4	8.7	27.7
10	8.3	28.8	6.5	26.1	8.1	27.1
11	8.3	29.0	7.1	26.9	8.2	28.9
12	7.9	28.8	7.7	28.0	8.1	28.0
13	8.2	29.3	7.5	27.8	8.4	29.0
14	8.4	29.9	7.6	28.0	8.3	28.5
15	8.3	27.8	7.8	29.5	8.1	28.0
16	8.4	29.4	7.6	29.3	8.1	27.7
17	8.5	30.3	7.8	28.8	8.1	28.0
18	7.3	28.5	7.8	27.8	8.0	27.7
19	7.7	29.1	8.0	28.1	8.0	28.0
20	7.3	27.7	7.9	27.4	8.0	27.6
21	7.1	28.2	7.7	27.2	8.2	28.2
22	6.7	29.0	7.4	26.5	8.5	28.6
23	6.8	28.5	7.2	26.4	8.5	28.9
24	6.9	28.2	* 7.4	* 26.3	9.2	29.0
25	7.1	26.9	* 7.5	* 26.2	9.2	28.9
26	* 7.3	* 27.1	7.7	26.0	9.3	28.9
27	7.5	27.4	7.5	26.3	8.6	28.6
28	7.8	28.0	7.2	25.2	8.3	28.1
29	7.9	26.3			8.9	28.1
30	8.1	26.7			8.2	27.4
31	7.8	27.8			8.5	28.1
MEANS	7.6	28.5	7.4	27.1	8.2	27.9
OBSVNS.	28	28	26	26	31	31
MAXIMUM	8.5	30.3	8.0	29.5	9.3	29.0
MINIMUM	6.4	26.3	6.1	25.2	7.3	26.4
STD.DEV.	.61	.98	.44	1.11	.48	.74

AMPHITRITE POINT 48 55.3 N 125 32.3 W

	APRIL		MAY		JUNE	1982
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	7.9	27.3	9.0	27.8	9.8	31.8
2	8.2	28.2	9.2	28.1	9.9	31.0
3	8.4	29.0	9.1	28.8	10.0	31.1
4	8.2	28.1	9.3	29.4	10.2	31.5
5	8.8	27.1	9.9	29.1	10.3	31.6
6	9.1	27.1	9.8	29.8	12.0	30.6
7	9.3	26.9	9.9	30.6	11.0	31.1
8	9.4	24.7	10.2	30.2	10.9	31.0
9	9.8	26.0	10.4	29.9	11.4	31.0
10	9.6	26.4	10.3	30.2	11.9	30.8
11	9.6	26.7	10.2	30.7	12.5	30.4
12	9.4	26.5	10.1	30.8	11.1	31.0
13	9.0	26.9	9.8	30.7	11.0	31.0
14	8.8	27.8	10.1	30.3	10.8	31.2
15	9.0	26.8	10.3	30.4	10.5	31.0
16	8.9	26.7	10.3	30.7	10.2	31.8
17	8.3	28.1	10.1	30.0	11.1	30.8
18	8.6	28.0	10.0	30.0	12.0	30.6
19	8.8	27.8	9.8	31.0	12.8	30.3
20	8.9	26.9	10.1	30.8	12.8	29.8
21	9.6	27.4	10.1	30.7	12.5	30.0
22	10.1	26.9	10.7	30.6	12.2	30.3
23	10.1	27.1	10.6	30.4	12.2	30.2
24	10.3	27.4	11.4	30.6	12.2	30.7
25	10.1	28.0	10.0	31.5	12.2	30.4
26	10.0	28.8	10.7	31.1	12.1	30.6
27	9.7	28.8	11.7	30.6	12.2	30.0
28	9.0	29.5	10.8	31.1	11.9	30.8
29	9.7	27.8	10.5	31.5	12.3	30.7
30	9.5	28.9	10.3	31.4	12.7	29.8
31			10.0	31.2		
MEANS	9.2	27.5	10.2	30.3	11.5	30.8
OBSVNS.	30	30	31	31	30	30
MAXIMUM	10.3	29.5	11.7	31.5	12.8	31.8
MINIMUM	7.9	24.7	9.0	27.8	9.8	29.8
STD.DEV.	.65	1.01	.58	.90	.95	.53

AMPHITRITE POINT 48 55.3 N 125 32.3 W

	JULY		AUGUST		SEPTEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	11.7	30.7	11.2	31.5	15.7	30.3
2	12.3	30.4	11.9	31.2	16.0	30.2
3	11.9	30.4	12.2	31.1	15.6	30.0
4	11.8	30.2	13.2	31.0	15.2	29.7
5	11.9	30.7	13.5	31.4	15.2	29.4
6	12.2	30.2	13.3	30.7	14.8	29.0
7	12.9	29.1	14.0	30.6	14.8	29.3
8	14.0	28.5	13.7	30.4	14.8	28.6
9	14.1	28.9	13.5	30.6	13.3	29.3
10	14.6	28.9	12.9	30.4	13.8	29.5
11	14.2	29.8	12.3	30.7	13.8	29.3
12	14.7	29.5	12.0	30.6	13.4	29.0
13	14.4	29.1	12.1	30.8	13.3	29.4
14	11.6	30.8	11.9	30.8	13.5	29.1
15	11.1	31.0	12.0	31.0	14.1	28.2
16	11.8	31.1	12.3	31.0	14.7	28.8
17	12.2	30.7	12.8	30.4	14.0	29.3
18	12.6	30.6	13.9	30.3	13.0	30.0
19	11.8	31.1	13.2	30.6	13.2	29.9
20	12.0	31.1	13.8	31.0	13.0	30.0
21	12.2	30.8	14.3	31.2	13.0	30.0
22	12.3	31.0	14.6	30.8	13.1	30.4
23	12.2	31.0	14.6	30.8	13.3	30.2
24	12.4	30.7	15.0	30.6	13.8	30.0
25	11.9	31.1	15.2	30.2	12.9	30.0
26	12.3	31.0	15.2	30.3	12.2	30.4
27	12.2	31.1	15.1	30.0	12.1	30.3
28	12.3	30.6	15.0	30.6	11.6	30.6
29	11.8	31.0	14.1	30.8	12.3	30.0
30	10.8	31.2	14.0	30.4	12.0	30.6
31	10.8	31.2	13.1	31.0		
MEANS	12.4	30.4	13.4	30.7	13.7	29.7
OBSVNS.	31	31	31	31	30	30
MAXIMUM	14.7	31.2	15.2	31.5	16.0	30.6
MINIMUM	10.8	28.5	11.2	30.0	11.6	28.2
STD.DEV.	1.06	.80	1.15	.35	1.17	.61

AMPHITRITE POINT 48 55.3 N 125 32.3 W

	OCTOBER		NOVEMBER		DECEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	12.2	31.0	11.2	26.3	9.9	29.9
2	12.2	30.7	10.9	23.9	* 10.0	* 30.0
3	12.0	30.6	11.0	24.2	10.2	30.2
4	12.8	30.3	11.0	26.9	10.1	30.7
5	12.1	30.4	11.2	27.3	10.2	30.3
6	11.2	29.8	11.1	27.1	10.2	30.2
7	11.2	29.7	10.9	27.3	10.1	29.9
8	11.6	29.1	10.9	27.4	* 9.5	* 30.0
9	12.1	29.0	10.8	26.8	8.9	30.2
10	12.0	28.9	10.6	27.7	9.0	30.0
11	11.2	29.4	10.5	28.2	* 9.0	* 30.0
12	11.3	30.2	10.5	28.2	9.1	29.9
13	11.8	29.8	10.7	29.5	9.2	29.9
14	12.2	30.0	10.9	29.1	8.8	28.9
15	12.3	29.4	10.7	29.1	*	*
16	11.7	30.3	10.8	29.8	*	*
17	11.4	30.7	10.7	29.4	*	*
18	11.7	30.0	10.3	28.8	*	*
19	11.6	29.9	9.9	29.0	10.6	30.2
20	11.6	30.2	9.8	28.8	8.9	27.8
21	11.5	30.0	9.5	28.9	9.2	28.1
22	11.5	30.2	9.0	28.5	9.6	29.0
23	*	*	9.1	28.6	9.6	28.9
24	*	*	9.0	28.4	9.0	28.4
25	*	*	9.0	28.9	7.4	27.1
26	*	*	9.2	28.9	7.6	26.5
27	11.6	27.8	* 9.5	* 29.3	7.2	25.8
28	11.7	25.4	9.8	29.8	7.8	27.2
29	11.4	25.4	9.9	30.2	7.9	27.2
30	11.6	25.6	9.8	28.9	8.0	26.7
31	11.8	26.5			7.8	27.1
MEANS	11.8	29.3	10.3	28.1	9.0	28.7
OBSVNS.	27	27	29	29	24	24
YRLY.MEANS.....					10.5	29.1
MAXIMUM	12.8	31.0	11.2	30.2	10.6	30.7
MINIMUM	11.2	25.4	9.0	23.9	7.2	25.4
STD.DEV.	.39	1.65	.74	1.50	1.02	1.53

CAPE BEALE 48 47.2 125 12.9 W

DATE	JANUARY TEMP	JANUARY SAL	FEBRUARY TEMP	FEBRUARY SAL	MARCH 1982 TEMP	MARCH 1982 SAL
1	7.8	29.1	8.4	26.0	8.8	27.0
2 *	6.6 *	29.3	9.0	28.1	8.5 *	26.5 *
3	5.3	29.6	8.0	29.1	8.2	26.0
4	6.3	29.1	7.9	28.1	9.7	27.6
5	5.1	29.1	7.0	28.1	7.7	26.5
6	7.0	29.6	7.0	28.6	8.0	26.5
7	6.0	28.6	7.3	28.6	8.0	26.5
8	7.8	28.6	7.3	29.0	8.0	25.5
9	7.8	28.1	7.0	29.1	8.4	27.0
10	7.7	29.1	6.7	29.0	8.0	28.0
11 *	7.8 *	29.3	* 6.9 *	29.0	7.9	28.0
12	7.9	29.6	7.2	29.1	8.2	28.0
13	8.0	29.1	7.4	27.0	8.2	30.0
14	8.2	28.1	8.7	28.6	7.9	30.0
15	8.2	28.6	7.9	27.0	8.3	30.0
16 *	8.1 *	28.4	8.0	28.1	8.1	30.0
17	8.0	28.1	7.8	26.5	8.2	30.0
18	7.8	28.6	* 7.9 *	26.3	8.3	30.0
19	7.4	28.6	8.0	26.0	7.8	30.0
20	7.0	27.6	8.0	27.0	7.9	29.0
21 *	*		7.9	28.6	7.9	29.0
22 *	*		7.0	28.1	8.3	29.0
23 *	*		* 7.0 *	27.9	8.3	29.0
24	7.9	27.0	7.1	27.6	7.9	30.0
25 *	*		7.3	27.0	8.1	30.0
26 *	*		7.8	27.0	8.1	30.0
27 *	*		7.4	28.1	8.3	30.0
28	8.0	27.0	8.0	28.1	7.9	30.0
29	7.9	25.5			9.0	29.0
30 *	7.9 *	26.0			8.0	30.0
31	7.8	26.5			* 8.0 *	30.0
MEANS	7.4	28.3	7.6	27.9	8.2	28.7
OBSVNS.	21	21	25	25	29	29
MAXIMUM	8.2	29.6	9.0	29.1	9.7	30.0
MINIMUM	5.1	25.5	6.7	26.0	7.7	25.5
STD.DEV.	.93	1.09	.57	.96	.40	1.50

CAPE BEALE 48 47.2 125 12.9 W

DATE	APRIL TEMP	APRIL SAL	MAY TEMP	MAY SAL	JUNE TEMP	JUNE SAL
1	* 8.0	* 29.0	9.9	32.0	10.0	31.0
2	8.0	29.0	10.3	30.0	9.9	30.0
3	8.3	28.0	9.8	30.0	10.0	30.0
4	8.3	28.0	9.8	30.0	10.8	30.0
5	8.7	28.0	10.2	30.0	10.8	30.0
6	9.0	28.0	11.4	29.0	11.3	31.0
7	9.2	26.0	10.9	30.0	11.3	31.0
8	9.8	25.0	10.8	32.0	11.2	30.0
9	9.8	26.0	11.4	31.0	11.9	30.0
10	9.6	26.0	* 11.6	* 30.0	13.1	30.0
11	9.3	28.0	11.8	29.0	11.2	31.0
12	* 9.0	* 27.5	12.2	30.0	11.8	30.0
13	8.7	27.0	11.2	30.0	11.1	31.0
14	8.7	28.0	12.0	30.0	10.8	31.0
15	9.8	28.0	12.4	30.0	11.0	30.0
16	8.9	28.0	10.2	30.0	11.0	30.0
17	8.6	28.0	9.3	30.0	* 11.0	* 30.5
18	9.0	29.0	10.4	30.0	10.9	31.0
19	9.1	28.0	10.4	30.0	12.1	30.0
20	9.9	28.0	10.6	30.0	11.4	31.0
21	* 10.4	* 28.0	9.8	30.0	10.9	31.0
22	11.0	28.0	9.9	30.0	11.8	31.0
23	10.6	28.0	9.8	31.0	10.9	30.0
24	* 11.1	* 28.5	11.0	30.0	13.1	30.0
25	11.6	29.0	10.3	31.0	11.3	31.0
26	* 11.3	* 29.5	* 10.6	* 31.5	11.7	30.0
27	11.0	30.0	11.0	32.0	10.8	30.0
28	11.0	30.0	11.2	32.0	12.8	28.0
29	* 10.8	* 30.0	* 10.6	* 31.5	11.3	29.0
30	10.6	30.0	9.9	31.0	10.7	31.0
31			9.8	31.0		
MEANS	9.5	28.0	10.6	30.4	11.3	30.3
OBSVNS.	24	24	28	28	29	29
MAXIMUM	11.6	30.0	12.4	32.0	13.1	31.0
MINIMUM	8.0	25.0	9.3	29.0	9.9	28.0
STD.DEV.	1.00	1.27	.83	.83	.80	.71

CAPE BEALE 48 47.2 125 12.9 W

DATE	JULY TEMP	JULY SAL	AUGUST TEMP	AUGUST SAL	SEPTEMBER 1982 TEMP	SEPTEMBER 1982 SAL
1	10.0	31.0	* 12.2	* 30.0	12.8	30.0
2	10.3	30.0	11.6	30.0	13.0	30.0
3	10.2	30.0	13.0	30.0	12.5	30.0
4	11.1	30.0	13.7	30.0	12.5	30.0
5	11.9	30.0	12.2	30.0	13.0	30.0
6	13.1	30.0	12.9	30.0	12.5	30.0
7	13.9	29.0	12.3	30.0	12.0	30.0
8	14.0	28.0	11.4	30.0	11.5	30.0
9	14.8	28.0	10.8	30.0	* 11.7	* 30.0
10	14.1	30.0	10.9	30.0	11.9	30.0
11	14.2	30.0	11.8	30.0	11.8	30.0
12	14.3	29.0	11.4	30.0	11.9	30.0
13	10.8	30.0	11.3	30.0	11.0	30.0
14	11.8	30.0	11.2	30.0	11.4	30.0
15	* 11.1	* 30.0	12.0	30.0	11.5	30.0
16	10.4	30.0	11.3	30.0	11.3	30.0
17	12.2	29.0	11.4	30.0	11.0	30.0
18	11.8	30.0	11.7	30.0	10.8	30.0
19	* 11.8	* 30.0	12.0	30.0	10.5	30.0
20	11.9	30.0	10.6	30.0	10.5	30.0
21	12.1	30.0	12.5	30.0	10.1	30.0
22	11.3	30.0	12.0	30.0	10.3	31.0
23	10.8	31.0	12.9	30.0	11.0	31.0
24	12.3	30.0	14.4	30.0	11.0	31.0
25	11.4	30.0	12.0	30.0	10.9	31.0
26	11.0	31.0	11.8	30.0	11.0	31.0
27	12.4	30.0	11.5	30.0	10.0	31.0
28	13.9	30.0	11.8	30.0	10.9	31.0
29	13.1	30.0	12.5	30.0	11.3	31.0
30	12.9	30.0	12.5	30.0	* 11.1	* 30.5
31	12.7	30.0	* 12.6	* 30.0		
MEANS	12.2	29.9	12.0	30.0	11.4	30.3
OBSVNS.	29	29	29	29	28	28
MAXIMUM	14.8	31.0	14.4	30.0	13.0	31.0
MINIMUM	10.0	28.0	10.6	30.0	10.0	30.0
STD.DEV.	1.39	.69	.85	.00	.86	.46

CAPE BEALE 48 47.2 125 12.9 W

DATE	OCTOBER TEMP	OCTOBER SAL	NOVEMBER TEMP	NOVEMBER SAL	DECEMBER 1982 TEMP	DECEMBER 1982 SAL
1	10.8	30.0	10.9	29.0	9.4	31.0
2	11.2	30.0	11.0	30.0	9.4	31.0
3	10.5	30.0	10.8	29.0	10.0	30.0
4	10.8	30.0	10.9	28.0	9.3	32.0
5	10.3	30.0	10.4	28.0	8.9	31.0
6	10.0	29.0	10.4	30.0	8.2	31.0
7	10.8	30.0	9.8	28.0	7.6	30.0
8	10.0	30.0	9.9	30.0	8.3	31.0
9	10.6	30.0	7.9	31.0	8.7	30.0
10	10.2	30.0	8.4	31.0	8.0	30.0
11	10.3	30.0	9.2	31.0	7.6	30.0
12	11.5	30.0	9.1	31.0	8.2	28.0
13	11.2	30.0	9.2	30.0	9.0	29.0
14	11.0	30.0	9.1	31.0	* 9.0	* 29.5
15	11.5	31.0	9.8	30.0	9.0	30.0
16	9.8	30.0	9.3	29.0	9.0	29.0
17	9.5	31.0	9.7	31.0	9.0	29.0
18	10.2	29.0	9.0	32.0	8.8	28.0
19	10.0	31.0	9.1	31.0	8.8	29.0
20	10.0	31.0	9.0	31.0	8.5	29.0
21	10.1	30.0	8.0	32.0	8.5	28.0
22	9.9	31.0	7.8	32.0	8.8	29.0
23	* 10.6	* 29.0	7.0	32.0	8.5	28.0
24	* 11.2	* 28.0	7.6	32.0	8.5	28.0
25	11.9	26.0	8.7	32.0	8.2	28.0
26	11.2	28.0	8.9	31.0	8.0	28.0
27	11.0	30.0	8.9	30.0	7.0	28.0
28	11.2	28.0	8.8	30.0	7.0	28.0
29	10.9	28.0	8.8	30.0	7.2	29.0
30	10.9	28.0	8.9	30.0	8.0	30.0
31	11.2	28.0			7.9	30.0
MEANS	10.6	29.6	9.2	30.4	8.4	29.4
OBSVNS.	29	29	30	30	30	30
YRLY.MEANS						
MAXIMUM	11.9	31.0	11.0	32.0	10.0	29.5
MINIMUM	9.5	26.0	7.0	28.0	10.0	32.0
STD.DEV.	.60	1.18	1.02	1.22	7.0	28.0
					.72	1.19

SHERINGHAM POINT 48 22.7 N 123 55.2 W

DATE	JANUARY TEMP	JANUARY SAL	FEBRUARY TEMP	FEBRUARY SAL	MARCH 1982 TEMP	MARCH 1982 SAL
1	7.8	30.4	7.4	30.4	7.4	30.0
2	8.0	30.2	7.4	30.6	7.4	29.9
3	7.6	30.2	7.6	30.6	7.6	30.4
4	8.0	30.4	6.6	31.0	7.0	29.8
5	8.0	30.2	6.6	30.4	7.2	30.0
6	8.0	30.4	7.2	30.0	7.3	27.6
7	7.4	30.2	7.4	30.3	7.8	28.4
8	7.8	30.2	7.0	30.4	8.0	28.6
9	7.8	30.4	7.4	30.3	8.4	30.2
10	7.8	30.7	7.2	31.0	8.2	30.6
11	8.0	31.1	7.6	30.4	8.4	30.4
12	8.2	30.7	7.4	31.0	7.8	30.7
13	8.0	31.1	7.6	30.3	8.2	30.3
14	8.2	31.1	7.6	30.3	8.4	30.4
15	8.2	30.7	7.4	30.6	8.6	30.6
16	8.0	30.4	7.6	30.8	8.2	29.9
17	8.2	30.4	7.4	30.4	8.4	30.2
18	8.0	30.7	7.0	29.0	8.0	29.9
19	8.4	30.7	7.4	30.6	8.4	30.2
20	8.4	31.0	7.6	29.9	8.6	30.3
21	6.8	30.7	7.8	30.2	8.6	30.0
22	6.8	29.0	7.0	28.5	8.5	29.9
23	7.0	30.3	7.4	30.3	8.4	30.2
24	7.2	29.8	7.2	30.0	8.4	30.0
25	7.2	30.0	7.4	30.3	8.4	30.4
26	7.6	30.3	7.6	30.2	8.0	31.0
27	7.4	30.4	7.6	30.3	8.2	30.4
28	7.4	30.3	7.4	30.3	8.2	30.4
29	7.6	30.4			8.4	30.7
30	7.4	30.4			8.2	31.2
31	7.6	30.4			8.3	31.0
MEANS	7.7	30.4	7.3	30.3	8.1	30.1
OBSVNS.	31	31	28	28	31	31
MAXIMUM	8.4	31.1	7.8	31.0	8.6	31.2
MINIMUM	6.8	29.0	6.6	28.5	7.0	27.6
STD.DEV.	.44	.41	.29	.52	.44	.74

SHERINGHAM POINT 48 22.7 N 123 55.2 W

DATE	APRIL TEMP	APRIL SAL	MAY TEMP	MAY SAL	JUNE TEMP	JUNE SAL	1982
1	7.8	* 30.8	9.2	31.1	9.8	31.1	
2	8.2	30.6	9.0	30.8	10.0	30.7	
3	8.2	29.9	9.0	31.4	10.0	30.7	
4	8.5	31.0	9.0	30.7	10.0	31.1	
5	8.3	29.9	9.0	31.4	10.0	31.0	
6	8.3	30.7	9.2	30.8	9.6	31.0	
7	8.2	30.2	9.8	31.1	9.8	30.6	
8	8.4	30.6	9.2	31.1	10.0	31.5	
9	8.4	30.7	9.4	30.7	10.2	31.8	
10	8.3	30.4	9.4	31.0	10.5	31.1	
11	8.2	30.2	9.2	30.7	10.4	31.2	
12	8.4	30.7	9.5	31.1	10.6	31.6	
13	8.2	30.4	9.4	31.4	10.0	31.8	
14	8.4	30.7	9.6	31.6	10.2	31.6	
15	8.4	30.4	10.0	31.5	9.8	31.1	
16	* 8.4	* 30.5	9.4	31.4	10.6	31.4	
17	8.4	30.7	9.2	31.1	11.2	31.9	
18	8.4	30.7	9.2	31.4	11.4	30.4	
19	8.8	30.7	9.4	31.1	12.8	31.0	
20	8.6	30.7	9.4	31.1	12.8	31.9	
21	8.4	30.4	10.2	31.1	11.9	31.8	
22	8.8	30.6	10.2	31.1	10.6	32.3	
23	8.8	30.7	10.0	31.1	10.8	32.0	
24	8.8	30.8	10.2	31.4	10.8	31.8	
25	8.6	30.6	9.8	31.8	10.7	31.8	
26	9.0	31.0	9.6	31.8	10.6	32.3	
27	9.0	30.8	9.5	31.5	10.4	32.0	
28	9.2	30.7	9.6	31.6	10.5	31.8	
29	8.8	30.6	9.4	31.4	10.8	31.0	
30	8.8	30.7	9.3	31.4	10.6	32.0	
31			9.8	31.1			
MEANS	8.5	30.6	9.5	31.2	10.6	31.4	
OBSVNS.	29	28	31	31	30	30	
MAXIMUM	9.2	31.0	10.2	31.8	12.8	32.3	
MINIMUM	7.8	29.9	9.0	30.7	9.6	30.4	
STD.DEV.	.31	.27	.36	.30	.79	.52	

SHERINGHAM POINT 48 22.7 N 123 55.2 W

	JULY		AUGUST		SEPTEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	11.8	31.2	11.4	31.0	11.8	31.4
2	11.2	30.7	11.6	30.7	12.0	30.0
3	11.6	30.8	11.6	30.7	11.8	31.0
4	12.2	30.8	11.4	30.7	11.8	31.1
5	11.2	31.4	11.2	31.0	11.2	31.5
6	11.2	30.4	11.4	31.0	11.6	31.2
7	10.8	31.8	11.8	31.6	11.6	31.4
8	11.3	31.8	10.8	31.8	11.3	31.5
9	11.1	31.8	10.4	31.4	11.4	31.4
10	10.6	32.0	11.4	31.2	11.0	31.0
11	10.8	31.8	11.2	31.5	11.4	31.0
12	11.2	32.0	11.2	31.2	11.4	31.2
13	10.7	31.9	11.2	31.2	11.6	31.2
14	11.3	31.8	11.4	31.2	11.2	30.7
15	10.2	31.6	11.2	31.0	11.4	31.1
16	11.3	30.4	11.4	31.2	11.0	31.2
17	13.0	30.8	11.6	31.0	11.4	31.0
18	12.2	30.6	11.6	31.0	10.8	31.5
19	11.8	31.9	11.5	31.4	11.0	31.2
20	10.6	32.3	11.4	31.2	10.4	31.5
21	11.8	31.8	10.5	31.5	11.2	31.2
22	11.0	32.0	11.4	32.0	11.2	31.5
23	11.0	31.8	11.6	31.8	11.4	31.2
24	11.0	31.8	11.4	31.8	11.0	31.0
25	10.5	31.5	11.8	30.6	11.2	30.7
26	10.6	32.0	11.6	31.0	11.2	30.7
27	10.8	31.8	11.4	31.2	11.4	30.7
28	11.0	31.5	11.6	31.0	11.2	30.4
29	11.4	30.7	11.4	31.0	11.2	31.0
30	11.0	31.2	11.6	31.0	11.4	30.7
31	11.2	31.0	12.2	29.9		
MEANS	11.2	31.4	11.4	31.2	11.3	31.1
OBSVNS.	31	31	31	31	30	30
MAXIMUM	13.0	32.3	12.2	32.0	12.0	31.5
MINIMUM	10.2	30.4	10.4	29.9	10.4	30.0
STD.DEV.	.58	.55	.35	.42	.33	.36

SHERINGHAM POINT 48 22.7 N 123 55.2 W

	OCTOBER		NOVEMBER		DECEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	11.4	31.2	11.0	30.4	9.0	31.1
2	11.0	30.4	11.2	31.0	9.2	30.8
3	10.8	30.4	10.5	31.2	9.0	30.8
4	10.6	30.4	10.4	30.8	9.0	30.8
5	10.8	30.7	9.8	31.5	9.2	30.6
6	10.0	30.7	10.0	32.4	9.2	30.6
7	10.8	31.0	9.8	32.3	9.0	30.3
8	9.8	31.0	9.8	31.2	9.4	30.3
9	10.0	30.7	9.9	32.1	9.2	30.6
10	10.6	30.8	9.8	31.1	9.4	30.6
11	10.4	31.0	9.5	30.8	8.4	31.0
12	10.5	31.1	9.8	30.8	8.6	30.6
13	10.6	30.6	9.9	30.6	8.8	31.1
14	10.6	31.2	9.8	30.6	9.6	30.6
15	10.4	31.0	9.9	32.1	9.0	31.4
16	9.8	31.2	9.4	31.1	9.2	30.8
17	9.8	31.5	9.0	31.4	8.6	30.0
18	9.5	31.0	9.4	30.8	8.8	30.2
19	10.2	31.4	9.0	31.1	8.4	30.4
20	9.4	31.4	9.0	31.1	8.4	30.2
21	10.6	31.2	9.2	31.1	9.2	29.5
22	9.8	31.2	9.4	30.8	9.4	30.0
23	10.4	31.1	9.0	30.4	9.8	30.0
24	10.4	31.1	9.2	30.6	9.6	30.3
25	10.0	30.8	8.2	30.8	9.8	30.0
26	9.8	30.4	9.2	30.7	9.8	30.3
27	9.8	30.8	8.8	30.7	9.4	30.3
28	11.0	30.2	8.8	30.6	9.6	30.6
29	11.2	31.0	9.0	30.3	9.4	30.6
30	11.4	30.2	9.2	30.3	9.0	30.6
31	11.2	30.4			8.6	30.2
MEANS	10.4	30.9	9.6	31.0	9.1	30.5
OBSVNS.	31	31	30	30	31	31
YRLY.MEANS.....					9.6	30.8
MAXIMUM	11.4	31.5	11.2	32.4	9.8	31.4
MINIMUM	9.4	30.2	8.2	30.3	8.4	29.5
STD.DEV.	.55	.36	.65	.57	.41	.40

RACE ROCKS 48 17.9 N 123 31.8 W

	JANUARY		FEBRUARY		MARCH	1982
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	7.5	31.2	7.7	31.2	7.4	30.8
2	7.8	31.1	7.6	31.0	7.4	31.1
3	7.5	31.0	7.5	30.8	7.2	31.0
4	6.9	31.0	7.6	31.2	7.2	31.1
5	6.9	30.8	7.6	31.4	7.6	30.3
6	4.7	30.6	7.4	31.0	7.5	30.3
7	6.9	31.0	7.4	31.2	8.5	30.4
8	7.5	30.8	7.4	31.5	8.2	30.3
9	7.5	31.0	7.3	31.4	7.6	30.4
10	7.5	31.0	7.2	31.6	8.3	31.0
11	6.9	31.1	7.6	30.8	8.1	31.2
12	7.5	31.1	7.7	31.2	8.3	30.8
13	* 7.4	* 31.1	7.6	31.0	7.5	31.1
14	7.2	31.1	7.4	31.4	7.6	31.4
15	7.5	31.4	7.5	31.5	7.4	30.4
16	7.5	31.1	7.3	30.8	7.6	30.7
17	7.5	31.2	7.4	31.1	6.7	30.0
18	7.2	31.1	7.6	31.2	6.9	29.9
19	7.2	31.0	7.4	30.8	7.5	30.3
20	6.9	30.8	7.3	31.1	7.7	30.3
21	6.7	31.0	7.4	31.2	8.9	30.2
22	6.7	31.4	7.5	31.0	9.0	30.4
23	7.2	31.4	7.6	30.8	9.4	30.4
24	7.8	31.6	7.6	30.6	9.0	30.6
25	7.6	32.3	7.7	30.7	9.7	30.8
26	7.5	31.6	7.7	30.6	8.3	31.1
27	7.6	31.9	7.6	30.8	8.3	31.0
28	7.8	31.6	7.6	31.2	8.9	31.1
29	7.6	31.5			8.6	32.5
30	7.5	31.4			8.3	31.5
31	7.4	31.1			7.5	31.5
MEANS	7.2	31.2	7.5	31.1	8.0	30.8
OBSVNS.	30	30	28	28	31	31
MAXIMUM	7.8	32.3	7.7	31.6	9.7	32.5
MINIMUM	4.7	30.6	7.2	30.6	6.7	29.9
STD.DEV.	.58	.35	.14	.28	.74	.54

RACE ROCKS 48 17.9 N 123 31.8 W

DATE	APRIL TEMP	APRIL SAL	MAY TEMP	MAY SAL	JUNE TEMP	JUNE SAL
1	7.2	31.2	9.0	31.0	11.0	31.6
2	7.2	31.2	8.9	31.0	10.5	31.0
3	7.6	31.2	9.2	31.4	10.7	31.2
4	8.4	31.1	10.6	31.4	10.4	31.2
5	8.9	31.0	10.6	31.1	10.6	32.1
6	9.3	31.2	9.4	31.2	11.2	31.8
7	9.2	31.0	9.6	31.5	9.9	32.0
8	9.4	31.5	9.7	31.5	10.4	31.8
9	8.9	31.1	10.1	32.0	11.2	32.0
10	9.1	31.2	10.3	31.8	10.3	32.1
11	8.4	31.2	10.0	31.5	10.1	32.3
12	9.2	31.0	9.2	31.9	10.4	32.3
13	7.8	31.1	9.6	31.2	9.9	31.8
14	8.2	30.6	9.2	31.1	10.1	31.6
15	8.2	30.6	9.3	31.2	10.8	31.6
16	8.6	30.3	10.1	31.0	11.4	31.5
17	7.1	30.6	9.9	31.4	12.0	31.2
18	7.8	30.6	10.2	31.5	11.8	31.1
19	8.1	30.6	10.8	31.1	11.7	31.5
20	10.7	31.0	10.6	31.5	10.7	32.0
21	9.9	31.1	10.7	31.4	11.3	31.9
22	10.6	31.2	10.3	32.1	10.9	32.4
23	9.7	31.2	11.0	31.6	10.1	31.6
24	9.8	31.1	10.6	31.9	10.8	32.1
25	10.4	31.2	9.6	32.1	10.0	31.8
26	9.2	31.1	9.9	32.1	10.8	31.6
27	9.6	31.5	10.3	32.4	10.2	31.4
28	8.5	32.1	10.1	32.1	10.0	31.5
29	9.4	31.1	9.2	31.8	11.4	31.8
30	9.9	31.1	10.0	32.0	11.7	31.6
31			11.6	31.4		
MEANS	8.9	31.1	10.0	31.6	10.7	31.7
OBSVNS.	30	30	31	31	30	30
MAXIMUM	10.7	32.1	11.6	32.4	12.0	32.4
MINIMUM	7.1	30.3	8.9	31.0	9.9	31.0
STD.DEV.	1.00	.34	.65	.40	.61	.37

RACE ROCKS 48 17.9 N 123 31.8 W

DATE	JULY TEMP	JULY SAL	AUGUST TEMP	AUGUST SAL	SEPTEMBER 1982 TEMP	SEPTEMBER 1982 SAL
1	11.9	31.1	12.2	31.1	12.2	30.8
2	12.2	31.6	12.3	30.6	12.6	30.6
3	11.0	31.2	12.1	31.0	11.2	30.7
4	11.7	31.6	12.3	31.6	11.4	31.1
5	11.0	31.8	11.6	31.9	12.2	31.2
6	12.4	31.9	11.1	31.5	11.4	31.6
7	11.2	31.6	12.0	31.9	11.2	31.6
8	11.9	32.1	11.2	31.9	11.0	31.9
9	11.8	31.9	11.1	31.6	11.0	31.6
10	10.8	31.4	10.7	31.9	11.3	32.4
11	11.0	31.6	10.4	31.8	11.2	31.5
12	11.1	31.6	11.2	31.5	11.2	31.6
13	10.1	32.1	11.8	30.8	12.2	31.6
14	11.0	32.4	12.4	31.6	11.8	32.4
15	10.4	32.1	11.8	31.6	11.1	31.6
16	11.9	30.4	11.7	31.8	11.6	31.8
17	12.1	31.0	11.4	31.5	11.5	32.1
18	11.9	31.5	11.2	32.0	11.8	31.6
19	11.9	31.6	12.1	32.1	11.1	31.6
20	11.6	31.8	11.2	31.9	10.6	31.8
21	11.3	31.8	10.8	31.9	11.0	31.5
22	12.1	31.5	11.3	31.9	10.4	31.4
23	10.8	32.0	12.0	31.4	10.7	31.1
24	11.2	32.0	12.2	31.0	10.7	31.4
25	11.3	31.9	12.1	30.8	11.6	31.2
26	10.0	31.8	12.3	30.8	12.3	31.1
27	10.6	31.6	12.6	30.2	11.3	30.0
28	11.8	31.2	12.9	30.3	11.1	30.3
29	12.0	31.0	12.5	30.3	11.9	30.3
30	12.1	30.8	12.8	29.9	11.6	30.6
31	11.9	30.7	12.6	29.9		
MEANS	11.4	31.6	11.8	31.3	11.4	31.3
OBSVNS.	31	31	31	31	30	30
MAXIMUM	12.4	32.4	12.9	32.1	12.6	32.4
MINIMUM	10.0	30.4	10.4	29.9	10.4	30.0
STD.DEV.	.64	.46	.65	.66	.54	.59

RACE ROCKS 48 17.9 N 123 31.8 W

DATE	OCTOBER TEMP	OCTOBER SAL	NOVEMBER TEMP	NOVEMBER SAL	DECEMBER 1982 TEMP	DECEMBER 1982 SAL
1	12.0	30.6	10.1	31.2	8.3	31.1
2	11.6	31.1	9.8	31.8	8.6	31.1
3	* 11.2	* 30.9	10.1	32.0	9.1	30.7
4	10.8	30.7	9.9	31.8	8.9	31.2
5	10.3	30.8	9.6	32.1	7.8	31.1
6	10.0	31.2	9.2	31.5	7.9	30.8
7	9.6	31.4	9.2	31.6	7.8	31.0
8	9.6	31.5	9.3	31.2	7.7	31.1
9	10.0	31.6	9.2	31.5	7.7	31.2
10	10.8	31.2	8.6	31.2	7.8	30.7
11	10.7	31.6	8.9	31.2	8.1	30.7
12	11.4	31.8	9.0	31.4	8.4	30.7
13	10.9	31.5	8.7	31.6	8.9	30.6
14	11.1	32.0	8.2	31.1	* 8.9	* 30.8
15	10.6	31.9	8.6	31.1	8.8	31.0
16	9.9	31.8	9.7	31.0	8.7	30.8
17	9.9	31.6	9.2	31.1	8.7	31.0
18	10.1	31.5	9.1	30.8	* 8.7	* 30.9
19	10.0	31.4	9.1	31.1	8.6	30.7
20	9.0	31.6	8.3	31.0	8.4	30.2
21	9.8	31.2	7.7	31.2	8.6	30.6
22	9.8	31.5	7.2	30.7	8.6	31.0
23	10.2	31.5	8.0	32.0	8.4	30.8
24	9.8	31.8	7.7	30.8	8.6	31.0
25	10.3	31.4	7.4	31.1	8.2	30.6
26	10.3	31.8	8.1	30.8	8.7	30.4
27	10.6	31.5	8.3	30.4	7.4	30.8
28	10.3	31.4	8.7	30.4	8.1	30.8
29	10.6	31.6	8.7	30.6	8.0	31.1
30	10.4	31.5	8.8	31.1	8.2	30.8
31	10.1	31.1			8.4	31.1
MEANS	10.3	31.4	8.8	31.2	8.3	30.9
OBSVNS.	30	30	30	30	29	29
YRLY.MEANS					9.6	31.3
MAXIMUM	12.0	32.0	10.1	32.1	9.1	31.2
MINIMUM	9.0	30.6	7.2	30.4	7.4	30.2
STD.DEV.	.64	.34	.77	.45	.43	.24

CAPE MUDGE 49 59.9 N 125 11.6 W

	JANUARY				FEBRUARY				MARCH				1982
DATE		TEMP		SAL		TEMP		SAL		TEMP		SAL	
1		5.3		27.8		7.2		28.4		7.2		28.4	
2		5.6		27.8		7.3		28.6		7.2		28.4	
3		5.8		28.2		7.3		28.6		7.3		28.1	
4		6.6		28.2		7.5		28.5		7.8		28.4	
5		7.0		28.1		7.8		28.4		8.2		28.4	
6		7.8		28.4		7.9		28.4		8.3		28.8	
7		7.9		28.6		7.8		28.6		8.3		28.8	
8		7.8		28.6		7.7		28.6		8.3		28.6	
9		8.0		29.1		7.7		28.6		8.4		28.8	
10		7.8		29.1	*	7.7	*	28.5	*	8.2	*	28.8	
11		8.0		28.4	*	7.6	*	28.4		7.9		28.8	
12		7.9		28.4		7.5		28.4		7.8		28.8	
13		7.9		28.4		7.5		28.5		7.7		28.4	
14		7.6		28.9		7.2		28.6		7.5		28.6	
15		6.9		28.6		7.2		28.6		7.5		28.9	
16	*	7.2	*	28.6		7.4		28.1		7.2		29.1	
17	*	7.5	*	28.5		7.6		28.4		6.9		29.1	
18		7.8		28.5	*	7.4	*	28.4		6.8		28.9	
19		7.1		28.2		7.2		28.4		7.6		28.6	
20		7.1		28.2		7.2		28.4		7.8		28.8	
21		6.7		28.4		7.6		28.4		8.4		28.8	
22		6.9		28.1		7.8		28.5		8.3		28.8	
23		6.8		28.5		7.9		28.6		8.6		28.9	
24		6.9		28.5	*		*			8.8		29.0	
25		7.2		28.9	*		*			8.8		29.0	
26	*	7.5	*	28.7	*		*			8.9		29.0	
27		7.9		28.4		7.4		28.4		8.6		28.8	
28		7.8		28.4		7.3		28.4		8.4		29.0	
29		6.8		26.9						7.8		28.5	
30		7.3		28.4						7.2		28.4	
31		7.1		28.9						7.2		28.4	
MEANS		7.2		28.4		7.5		28.5		7.9		28.7	
OBSVNS.		28		28		22		22		30		30	
MAXIMUM		8.0		29.1		7.9		28.6		8.9		29.1	
MINIMUM		5.3		26.9		7.2		28.1		6.8		28.1	
STD.DEV.		.74		.44		.25		.12		.60		.26	

CAPE MUDGE 49 59.9 N 125 11.6 W

	APRIL		MAY		JUNE		1982
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL	
1	7.2	28.6	12.7	29.0	*	*	
2	7.7	28.6	12.7	29.3	*	*	
3	7.9	28.5	12.8	29.5	*	*	
4	8.6	28.8	13.3	29.0	16.9	28.1	
5	8.6	28.8	13.1	29.0	12.3	28.2	
6	8.9	28.9	13.1	29.0	13.1	29.8	
7	9.2	28.9	13.1	29.4	13.3	29.8	
8	9.8	29.0	12.9	29.5	14.3	29.7	
9	9.8	29.0	12.2	29.3	15.7	29.4	
10	8.9	28.8	11.2	29.5	15.6	29.8	
11	8.6	28.9	11.6	29.5	15.4	29.7	
12	8.3	28.8	12.0	29.3	14.2	29.7	
13	7.0	28.6	12.7	29.3	14.3	29.4	
14	* 7.0	* 28.6	12.2	29.4	12.9	28.0	
15	* 6.9	* 28.6	11.1	29.5	13.1	29.8	
16	6.9	28.6	11.1	29.5	14.2	29.7	
17	7.2	28.6	10.9	29.3	15.6	29.8	
18	8.9	28.9	10.8	29.3	16.6	17.5	
19	9.4	28.9	11.1	29.5	12.3	28.2	
20	10.0	28.9	12.6	29.1	13.8	28.6	
21	11.1	29.3	12.2	29.1	15.6	29.8	
22	11.6	29.3	11.4	29.3	12.8	29.0	
23	11.4	29.3	11.6	29.3	14.3	29.4	
24	11.1	29.1	11.6	29.3	13.3	29.8	
25	9.7	29.0	11.4	29.3	12.3	28.2	
26	* 9.2	* 28.9	11.1	29.5	14.2	29.7	
27	8.6	28.8	11.2	29.5	15.6	29.8	
28	8.8	28.8	10.9	29.3	16.7	26.0	
29	8.9	29.0	10.3	29.3	12.3	28.2	
30	8.9	28.9	10.4	29.7	14.2	29.7	
31			10.3	29.5			
MEANS	9.0	28.9	11.8	29.3	14.3	28.7	
OBSVNS.	27	27	31	31	27	27	
MAXIMUM	11.6	29.3	13.3	29.7	16.9	29.8	
MINIMUM	6.9	28.5	10.3	29.0	12.3	17.5	
STD.DEV.	1.29	.22	.92	.18	1.43	2.42	

CAPE MUDGE 49 59.9 N 125 11.6 W

	JULY		AUGUST		SEPTEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	16.9	25.8	* 18.1	* 26.4	13.3	27.4
2	17.0	25.8	18.1	25.6	13.6	27.6
3	17.2	27.2	17.8	25.6	13.9	27.8
4	15.8	27.8	17.2	24.4	13.9	27.8
5	14.0	25.8	17.2	24.6	14.2	26.7
6	13.7	27.6	13.6	27.1	13.6	27.1
7	15.2	25.0	13.6	27.1	14.1	27.2
8	16.0	25.0	15.3	27.8	13.9	27.7
9	16.1	25.1	14.8	24.2	13.6	27.7
10	16.7	23.4	14.9	24.0	13.6	27.7
11	16.3	23.1	14.6	25.8	13.7	26.9
12	16.0	23.5	16.4	24.0	14.6	26.5
13	16.9	23.9	16.4	23.9	16.7	26.5
14	16.9	24.2	16.4	23.9	15.7	26.0
15	16.9	24.2	18.0	24.7	15.6	26.1
16	17.1	23.4	18.1	25.6	14.4	26.5
17	15.8	27.8	17.3	24.4	13.3	27.7
18	13.7	27.3	13.6	27.1	13.9	26.8
19	15.2	26.0	13.6	27.1	14.2	26.5
20	15.3	26.1	13.8	27.7	12.8	27.8
21	15.3	25.9	14.6	27.6	14.2	27.2
22	15.0	27.3	13.0	28.6	12.8	27.8
23	15.1	27.3	14.8	24.2	11.8	27.7
24	14.1	28.6	15.3	27.7	13.3	27.6
25	13.4	27.2	14.1	27.2	13.3	27.4
26	15.8	27.2	11.3	28.2	13.3	27.4
27	18.1	25.8	11.4	28.2	13.2	28.1
28	18.0	25.8	13.0	27.6	* 13.4	* 28.1
29	18.3	26.0	15.3	27.8	* 13.7	* 28.0
30	18.2	25.9	15.3	27.8	13.9	28.0
31	18.1	27.2	14.6	27.6		
MEANS	16.1	25.9	15.1	26.2	13.9	27.3
OBSVNS.	31	31	30	30	28	28
MAXIMUM	18.3	28.6	18.1	28.6	16.7	28.1
MINIMUM	13.4	23.1	11.3	23.9	11.8	26.0
STD.DEV.	1.41	1.51	1.88	1.63	.95	.60

CAPE MUDGE 49 59.9 N 125 11.6 W

DATE	OCTOBER TEMP	OCTOBER SAL	NOVEMBER TEMP	NOVEMBER SAL	DECEMBER 1982 TEMP	DECEMBER 1982 SAL
1	11.4	29.1	10.2	28.6	8.8	29.1
2	11.4	29.1	10.3	28.8	* 8.4	* 29.1
3	11.7	29.4	10.3	28.9	* 7.9	* 29.0
4	10.1	29.9	10.8	26.4	7.5	29.0
5	* 10.0	* 29.6	10.8	26.4	7.4	28.9
6	* 9.9	* 29.3	10.9	26.5	7.2	28.6
7	9.8	29.0	10.8	26.5	7.0	28.9
8	9.8	28.9	12.2	27.8	6.9	28.8
9	11.1	29.4	12.3	28.0	6.7	28.8
10	10.9	28.5	12.3	28.0	7.3	29.1
11	11.9	28.4	12.2	28.1	7.5	29.0
12	11.6	28.4	9.4	29.5	7.6	29.0
13	11.9	28.4	9.2	29.4	8.3	29.0
14	12.1	29.0	9.2	29.3	* 8.3	* 29.0
15	11.7	28.4	9.1	29.3	8.3	29.1
16	11.1	28.8	* 9.1	* 29.3	8.3	29.1
17	11.1	28.6	9.1	29.3	* 8.1	* 29.1
18	11.4	29.0	8.9	29.4	* 8.0	* 29.0
19	11.4	29.0	9.0	29.3	7.8	28.9
20	11.1	28.8	8.9	29.1	7.8	28.9
21	11.2	28.5	7.2	28.6	* 7.8	* 28.5
22	*	*	7.1	28.8	7.9	28.1
23	*	*	6.9	28.5	6.9	28.6
24	*	*	7.0	28.4	* 7.2	* 28.6
25	*	*	7.4	29.1	* 7.5	* 28.5
26	10.9	28.5	7.6	29.3	7.8	28.4
27	10.8	28.5	* 8.0	* 29.3	6.9	28.8
28	10.6	28.5	* 8.4	* 29.3	7.8	28.9
29	10.4	28.4	8.8	29.3	7.9	29.1
30	10.0	28.6	8.9	29.4	7.8	29.1
31	10.0	28.8			7.9	28.9
MEANS	11.0	28.8	9.5	28.5	7.6	28.9
OBSVNS.	25	25	27	27	23	23
YRLY.MEANS					11.1	28.1
MAXIMUM	12.1	29.9	12.3	29.5	8.8	29.1
MINIMUM	9.8	28.4	6.9	26.4	6.7	28.1
STD.DEV.	.68	.39	1.68	1.01	.54	.25

CHROME ISLAND 49 28.3 N 124 40.9 W

DATE	JANUARY TEMP	JANUARY SAL	FEBRUARY TEMP	FEBRUARY SAL	MARCH 1982 TEMP	MARCH 1982 SAL
1	7.5	28.2	7.7	27.1	8.4	28.6
2	6.9	28.0	7.8	25.8	8.5	29.1
3	6.4	28.2	8.2	28.1	8.6	28.9
4	6.2	28.4	8.0	28.1	8.5	28.6
5	5.8	29.1	8.0	28.4	8.1	28.9
6	6.7	28.0	8.0	28.1	9.0	27.7
7	7.5	28.5	8.2	28.1	8.5	27.4
8	8.0	28.1	7.9	28.1	8.9	28.5
9	8.4	28.6	7.8	28.1	8.5	28.1
10	8.3	28.5	7.6	28.8	8.7	28.2
11	8.8	29.1	6.9	28.5	8.5	28.2
12	8.6	28.9	7.9	29.1	8.4	28.5
13	8.2	28.4	8.6	28.9	7.8	28.4
14	8.4	28.6	8.7	29.0	7.5	28.4
15	8.3	28.4	8.7	28.8	7.5	28.4
16	8.3	28.6	8.9	29.0	7.5	28.1
17	8.5	28.6	9.0	29.3	7.8	28.4
18	8.1	28.6	8.4	29.1	8.0	28.1
19	7.9	28.1	8.8	29.0	8.4	27.1
20	8.0	28.9	8.7	28.2	9.0	28.2
21	7.7	28.6	7.8	27.1	9.2	28.2
22	7.6	28.6	7.9	28.1	9.3	28.0
23	7.7	28.6	7.9	28.1	9.0	28.0
24	7.5	28.1	7.5	28.6	8.7	28.2
25	7.6	28.6	7.2	28.2	8.6	28.5
26	7.6	28.1	7.4	27.2	8.2	28.6
27	7.5	28.8	7.9	29.1	8.5	28.6
28	7.9	29.1	8.1	29.7	8.2	28.4
29	7.8	28.4			8.3	28.9
30	7.9	29.4			8.2	28.9
31	7.5	28.6			7.9	28.4
MEANS	7.7	28.5	8.1	28.3	8.4	28.3
OBSVNS.	31	31	28	28	31	31
MAXIMUM	8.8	29.4	9.0	29.7	9.3	29.1
MINIMUM	5.8	28.0	6.9	25.8	7.5	27.1
STD.DEV.	.70	.35	.52	.82	.48	.43

CHROME ISLAND 49 28.3 N 124 40.9 W

DATE	APRIL TEMP	APRIL SAL	MAY TEMP	MAY SAL	JUNE TEMP	JUNE SAL
						1982
1	7.9	28.1	10.8	28.5	14.2	28.4
2	8.2	28.4	10.0	28.5	14.4	28.2
3	8.5	28.4	10.5	28.4	14.8	28.2
4	8.4	28.1	10.8	28.5	15.1	27.8
5	8.9	28.5	11.8	28.5	15.0	27.8
6	9.1	28.5	12.0	28.8	15.5	27.2
7	9.4	28.2	11.5	28.6	16.0	27.3
8	10.0	28.6	12.5	28.6	16.1	27.3
9	10.0	28.1	12.8	28.5	16.4	27.4
10	10.0	28.9	13.0	28.2	15.8	27.8
11	9.9	28.4	12.9	28.5	15.6	27.6
12	9.1	28.2	12.2	28.2	16.6	27.7
13	8.6	28.6	12.4	28.1	16.7	28.1
14	8.5	28.6	11.9	26.5	17.8	25.8
15	8.6	28.8	11.9	26.1	18.5	25.4
16	8.9	28.5	13.1	27.7	19.4	24.3
17	9.2	28.5	13.1	27.4	19.4	24.0
18	9.7	28.4	13.1	28.5	20.8	22.1
19	9.7	28.4	13.3	28.2	21.2	23.5
20	10.1	28.6	13.2	28.0	21.2	22.9
21	10.9	28.2	13.3	28.2	21.3	23.7
22	11.4	29.0	14.6	28.0	20.6	24.6
23	10.8	28.5	13.5	27.7	21.0	24.8
24	10.8	28.5	14.7	27.6	20.6	25.6
25	11.3	28.6	15.0	27.8	19.7	24.6
26	10.8	28.2	13.7	27.4	18.3	24.6
27	10.4	28.1	12.8	27.4	17.5	25.9
28	9.8	28.1	13.6	27.4	16.9	26.0
29	9.9	28.4	13.7	25.9	18.6	24.4
30	9.6	28.4	15.0	27.6	18.1	22.6
31			15.0	27.3		
MEANS	9.6	28.4	12.8	27.9	17.8	25.9
OBSVNS.	30	30	31	31	30	30
MAXIMUM	11.4	29.0	15.0	28.8	21.3	28.4
MINIMUM	7.9	28.1	10.0	25.9	14.2	22.1
STD.DEV.	.95	.24	1.31	.73	2.31	1.92

CHROME ISLAND 49 28.3 N 124 40.9 W

	JULY		AUGUST		SEPTEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	18.1	23.3	17.8	25.2	17.9	26.0
2	17.5	25.1	18.3	25.6	18.4	26.4
3	16.2	26.4	16.7	26.0	17.2	26.3
4	16.0	26.3	16.8	26.3	16.0	27.3
5	15.9	27.3	16.5	26.1	15.9	27.3
6	16.0	26.9	17.2	25.8	15.0	27.3
7	16.7	27.1	18.9	23.0	15.2	28.1
8	16.0	26.7	17.8	25.2	14.6	28.8
9	16.0	26.5	17.8	23.9	14.7	28.4
10	15.8	25.8	17.8	23.1	13.3	28.1
11	16.8	25.5	17.3	25.1	14.0	28.4
12	17.8	24.4	15.9	25.8	14.9	28.1
13	17.6	23.0	16.2	26.0	15.4	27.7
14	17.8	24.4	15.8	26.0	16.8	26.3
15	18.2	24.2	16.6	26.1	16.6	27.4
16	18.0	24.2	15.9	26.0	16.2	26.3
17	18.8	26.0	18.1	25.2	17.9	26.8
18	19.3	23.0	17.8	25.5	16.0	26.8
19	18.3	23.8	18.3	24.0	15.8	27.8
20	18.0	23.9	19.1	24.2	14.8	27.8
21	17.5	23.8	18.0	23.9	16.0	27.8
22	17.5	24.6	16.8	24.0	15.6	27.4
23	18.6	24.0	17.4	24.6	15.0	26.8
24	18.1	24.4	17.4	24.3	15.4	26.4
25	18.1	23.7	18.7	24.2	15.4	27.3
26	18.4	23.0	18.9	24.4	15.0	27.6
27	19.2	23.4	18.2	25.2	14.3	28.2
28	18.6	23.7	18.0	24.7	14.8	27.6
29	20.0	23.1	16.8	26.3	15.0	27.3
30	19.8	24.4	17.2	26.4	15.2	27.6
31	19.6	24.8	17.0	26.3		
MEANS	17.7	24.7	17.5	25.1	15.6	27.4
OBSVNS.	31	31	31	31	30	30
MAXIMUM	20.0	27.3	19.1	26.4	18.4	28.8
MINIMUM	15.8	23.0	15.8	23.0	13.3	26.0
STD.DEV.	1.23	1.34	.91	.99	1.17	.73

CHROME ISLAND 49 28.3 N 124 40.9 W

	OCTOBER		NOVEMBER		DECEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	14.5	27.2	10.8	28.9	9.0	27.2
2	14.2	27.3	10.9	27.8	8.8	28.0
3	14.0	27.6	10.2	27.3	9.0	28.2
4	14.0	27.8	10.0	27.6	8.6	28.5
5	14.0	28.1	10.1	28.4	8.8	28.0
6	13.2	28.0	10.0	28.6	9.0	28.5
7	11.2	28.2	10.6	28.8	9.0	27.2
8	11.6	28.6	10.0	29.1	9.0	27.2
9	12.0	28.8	10.1	27.1	8.6	27.4
10	12.4	28.6	9.9	27.3	8.8	27.4
11	13.2	28.5	10.3	27.3	8.4	27.6
12	13.1	28.0	9.8	27.1	9.0	28.2
13	13.4	27.7	9.0	28.0	8.8	28.2
14	13.5	28.2	9.4	27.6	9.0	28.0
15	13.0	27.4	9.4	27.2	9.4	28.5
16	12.8	27.6	10.1	27.8	9.6	28.6
17	12.2	27.7	10.0	27.7	9.4	28.2
18	12.0	27.4	9.4	27.6	9.4	28.2
19	11.2	28.0	9.3	27.4	8.9	28.5
20	11.0	28.2	9.0	27.6	8.8	28.5
21	11.4	27.8	8.8	27.6	9.3	28.2
22	11.5	28.9	8.7	27.7	8.9	28.2
23	11.0	29.0	8.5	27.6	9.0	28.2
24	11.0	29.3	8.5	27.6	9.0	27.8
25	11.0	29.3	8.8	27.8	9.1	28.2
26	11.1	29.3	9.0	28.2	8.2	26.3
27	11.0	27.3	9.3	28.2	6.7	24.6
28	11.1	28.5	9.6	28.6	7.4	26.9
29	11.3	25.8	9.4	28.2	7.9	27.7
30	11.1	28.8	9.2	28.2	7.9	27.7
31	10.9	28.4			7.9	27.6
MEANS	12.2	28.1	9.6	27.9	8.7	27.8
OBSVNS.	31	31	30	30	31	31
YRLY.MEANS.....					12.2	27.4
MAXIMUM	14.5	29.3	10.9	29.1	9.6	28.6
MINIMUM	10.9	25.8	8.5	27.1	6.7	24.6
STD.DEV.	1.20	.75	.66	.55	.62	.81

SISTERS ISLAND 49 29.2 N 124 26.0 W

DATE	JANUARY TEMP	JANUARY SAL	FEBRUARY TEMP	FEBRUARY SAL	MARCH 1982 TEMP	MARCH 1982 SAL
1	6.9	27.8	6.9	28.5	7.0	28.4
2	6.7	27.8	6.9	28.5	6.9	28.4
3	6.7	27.8	6.9	28.5	7.0	28.6
4	6.4	27.7	6.7	28.2	6.9	28.1
5	6.1	27.8	6.9	28.4	6.9	28.1
6	6.3	28.0	6.7	28.5	7.2	28.2
7	6.1	27.6	6.7	28.2	7.2	28.1
8	7.1	28.2	6.7	28.5	6.7	28.2
9	7.2	28.1	6.1	28.4	6.9	27.8
10	7.1	28.4	6.1	28.5	6.9	28.1
11	7.1	28.8	6.7	28.5	6.9	28.4
12	7.2	28.1	6.9	28.6	6.9	28.2
13	6.7	27.7	6.9	28.8	6.9	28.4
14	6.9	28.6	7.2	28.5	6.8	28.2
15	6.9	28.5	7.2	28.1	6.9	28.5
16	6.9	28.5	7.1	27.7	6.9	28.1
17	7.3	28.9	6.9	28.4	7.2	28.4
18	7.0	28.4	6.8	28.6	7.2	28.2
19	6.7	28.6	7.4	29.1	7.1	28.4
20	6.8	28.8	6.9	28.0	7.2	28.4
21	7.3	29.7	6.4	28.2	7.1	28.2
22	6.2	29.3	6.8	28.5	7.1	28.4
23	6.7	28.8	6.0	28.1	7.8	28.2
24	6.6	29.1	6.8	28.6	7.7	28.2
25	7.1	29.5	7.2	28.9	7.6	28.5
26	7.3	29.1	7.1	28.6	8.1	28.2
27	6.9	29.3	6.8	28.5	8.2	28.2
28	6.8	29.3	6.8	28.2	8.3	28.2
29	6.8	29.3			8.1	28.2
30	6.8	28.8			7.7	28.2
31	6.9	28.9			7.4	28.5
MEANS	6.8	28.6	6.8	28.4	7.2	28.3
OBSVNS.	31	31	28	28	31	31
MAXIMUM	7.3	29.7	7.4	29.1	8.3	28.6
MINIMUM	6.1	27.6	6.0	27.7	6.7	27.8
STD.DEV.	.33	.61	.33	.28	.46	.17

SISTERS ISLAND 49 29.2 N 124 26.0 W

DATE	APRIL TEMP	APRIL SAL	MAY TEMP	MAY SAL	JUNE TEMP	JUNE SAL
1	7.4	28.4	9.4	28.5	14.7	25.8
2	7.4	28.1	10.1	28.5	14.4	25.2
3	7.6	28.4	10.6	28.8	15.2	26.0
4	7.6	28.5	9.4	28.4	14.9	27.2
5	8.0	28.0	10.6	28.5	13.8	27.7
6	8.0	28.0	11.1	28.8	14.6	27.2
7	8.1	28.0	10.8	28.9	15.8	23.4
8	8.0	28.1	9.4	28.5	16.4	22.7
9	9.0	28.1	9.8	28.6	16.9	24.2
10	8.8	28.1	9.8	28.4	18.1	22.6
11	8.1	28.0	10.3	28.0	19.4	23.0
12	8.1	28.0	10.9	28.4	18.3	24.8
13	7.8	28.0	11.1	28.5	17.2	23.3
14	7.8	28.2	11.1	28.5	18.3	23.7
15	8.0	28.2	11.9	28.4	18.9	23.8
16	8.1	28.2	12.5	28.1	18.9	25.0
17	8.1	28.2	11.1	28.1	19.1	22.6
18	8.2	28.2	11.2	28.5	19.7	22.4
19	8.9	28.4	12.5	28.5	20.2	22.6
20	9.2	28.5	13.1	28.4	20.7	23.5
21	10.6	28.5	12.9	28.2	18.2	25.0
22	11.9	28.4	11.5	27.8	18.9	24.2
23	9.4	28.4	12.9	27.8	18.3	23.8
24	9.4	28.4	12.9	27.7	18.2	23.5
25	10.1	28.5	10.8	28.6	19.6	19.7
26	9.7	28.4	10.1	28.8	17.6	22.6
27	10.0	28.4	10.9	29.0	17.1	23.4
28	9.4	28.4	12.4	28.1	16.4	24.1
29	9.9	28.5	12.1	29.0	17.6	21.0
30	9.2	28.6	12.9	28.8	19.3	18.2
31			13.6	28.2		
MEANS	8.7	28.3	11.3	28.4	17.6	23.7
OBSVNS.	30	30	31	31	30	30
MAXIMUM	11.9	28.6	13.6	29.0	20.7	27.7
MINIMUM	7.4	28.0	9.4	27.7	13.8	18.2
STD.DEV.	1.07	.20	1.23	.34	1.88	2.03

SISTERS ISLAND 49 29.2 N 124 26.0 W

	JULY		AUGUST		SEPTEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	17.3	21.7	16.5	20.5	16.4	25.0
2	17.0	22.4	16.2	20.0	16.6	25.1
3	16.2	22.1	16.4	18.7	17.1	25.1
4	16.3	17.3	17.1	17.8	17.6	25.4
5	15.9	19.2	16.4	20.0	17.8	25.2
6	16.8	16.2	17.4	19.9	16.5	25.4
7	17.1	14.8	19.1	19.7	16.4	24.7
8	16.7	19.1	17.9	19.7	15.9	25.4
9	17.2	17.6	17.9	21.4	14.1	26.1
10	16.4	19.0	17.3	22.0	14.6	26.4
11	17.9	18.2	17.5	20.9	15.2	23.7
12	17.6	20.3	16.1	23.4	15.1	24.2
13	18.6	19.9	15.6	23.9	15.3	24.3
14	16.0	23.4	15.2	25.9	15.6	25.1
15	16.4	20.4	18.2	20.6	15.4	26.4
16	17.2	20.3	17.2	21.0	15.4	25.9
17	18.9	20.1	18.3	21.4	15.8	25.9
18	17.8	22.2	17.2	23.7	17.8	25.5
19	17.5	22.9	17.5	22.9	16.1	25.5
20	17.5	22.2	16.3	23.1	15.4	25.9
21	18.1	21.4	15.4	24.0	15.0	26.1
22	17.6	18.6	15.0	24.6	15.0	26.3
23	18.1	20.4	14.9	25.0	14.9	26.4
24	18.3	20.9	15.0	25.9	14.7	26.3
25	18.7	21.0	17.4	24.3	15.3	25.5
26	19.0	21.3	17.6	24.8	15.2	25.8
27	20.0	21.4	17.3	25.2	15.5	26.7
28	20.1	22.4	17.0	25.6	14.0	27.8
29	19.3	22.0	16.2	25.0	14.6	27.3
30	18.7	22.2	16.3	24.8	14.6	27.1
31	16.8	21.4	15.9	24.8		
MEANS	17.6	20.4	16.8	22.6	15.6	25.7
OBSVNS.	31	31	31	31	30	30
MAXIMUM	20.1	23.4	19.1	25.9	17.8	27.8
MINIMUM	15.9	14.8	14.9	17.8	14.0	23.7
STD.DEV.	1.13	2.04	1.07	2.38	1.02	.91

SISTERS ISLAND 49 29.2 N 124 26.0 W

	OCTOBER		NOVEMBER		DECEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	14.7	27.3	9.7	27.2	9.0	28.0
2	14.5	27.4	9.5	27.3	8.9	27.8
3	13.9	27.4	9.7	28.0	9.2	28.4
4	12.4	27.6	9.6	27.6	8.3	28.0
5	11.9	28.1	9.8	28.2	8.1	26.7
6	11.0	28.8	9.4	27.8	8.3	28.0
7	11.0	28.6	9.6	27.4	8.2	28.0
8	11.3	28.0	9.7	27.4	8.1	28.2
9	11.8	27.4	9.3	27.6	8.0	28.2
10	12.1	27.4	9.1	27.7	8.3	28.1
11	12.2	26.9	8.8	26.8	7.9	28.2
12	12.4	26.9	8.7	27.2	8.2	28.2
13	12.7	27.2	8.7	27.2	8.1	28.2
14	12.2	27.8	8.7	27.2	8.2	28.1
15	12.5	27.1	8.9	27.2	8.3	28.2
16	12.1	27.7	8.8	27.1	8.6	28.5
17	11.4	27.6	9.1	27.6	8.3	28.2
18	11.4	27.6	9.1	27.6	8.1	28.2
19	11.1	27.4	8.3	27.6	8.1	28.6
20	10.8	27.4	8.6	27.4	8.1	28.2
21	10.8	27.4	8.4	27.6	8.1	28.2
22	10.4	28.4	8.6	27.6	8.0	28.0
23	10.3	28.2	8.0	27.4	7.9	28.4
24	10.3	28.8	8.1	28.0	8.1	28.5
25	10.6	28.5	8.1	28.0	8.3	28.9
26	10.3	28.5	8.6	28.0	8.1	28.6
27	10.3	28.6	8.3	27.7	8.1	28.8
28	10.4	27.4	8.9	28.2	7.4	28.0
29	10.3	27.4	9.0	28.4	7.3	28.2
30	9.8	28.0	8.9	27.8	7.2	28.5
31	9.9	27.4			7.1	28.6
MEANS	11.5	27.7	8.9	27.6	8.1	28.2
OBSVNS.	31	31	30	30	31	31
YRLY.MEANS					11.4	26.5
MAXIMUM	14.7	28.8	9.8	28.4	9.2	28.9
MINIMUM	9.8	26.9	8.0	26.8	7.1	26.7
STD.DEV.	1.27	.56	.53	.37	.45	.38

DEPARTURE BAY 49 12.6 N 123 57.3 W

	JANUARY		FEBRUARY		MARCH 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	*	*	6.6	25.30	7.8	24.48
2	*	*	6.8	26.65	* 7.4	* 23.78
3	*	*	7.1	26.06	7.0	23.07
4	5.4	27.22	5.5	25.56	7.4	27.03
5	5.0	27.18	* 6.1	* 26.55	6.7	25.36
6	4.9	26.96	6.7	27.54	* 6.9	* 25.65
7	4.6	26.58	* 6.5	*	* 7.2	* 25.95
8	5.9	26.69	6.3	*	7.4	26.24
9	* 6.7	* 27.40	5.3	*	7.2	25.78
10	* 7.6	* 28.11	* 5.6	*	7.1	27.04
11	8.4	28.82	6.0	*	* 7.1	* 27.10
12	6.2	27.13	*	*	7.1	27.16
13	6.0	27.46	*	*	* 7.3	* 27.41
14	6.1	27.11	*	*	* 7.5	* 27.67
15	*	*	8.2	*	7.7	27.92
16	*	*	8.5	*	8.0	27.94
17	*	*	7.7	*	7.5	27.97
18	6.9	28.10	*	*	8.2	27.86
19	6.6	27.43	*	*	7.6	27.81
20	6.4	25.64	*	*	* 7.6	* 27.80
21	7.0	27.96	*	*	* 7.5	* 27.79
22	*	*	6.3	22.99	7.5	27.78
23	*	*	6.8	25.55	8.3	27.76
24	*	*	* 6.7	* 25.06	8.2	27.84
25	5.5	23.12	6.6	24.57	*	*
26	7.2	27.64	*	*	*	*
27	6.2	26.43	*	*	*	*
28	7.2	26.71	*	*	*	*
29	6.9	24.45			*	*
30	* 6.8	* 24.73			*	*
31	* 6.7	* 25.02			7.7	28.08
MEANS	6.2	26.81	6.7	25.53	7.6	26.89
OBSVNS.	18	18	14	8	17	17
MAXIMUM	8.4	28.82	8.5	27.54	8.3	28.08
MINIMUM	4.6	23.12	5.3	22.99	6.7	23.07
STD.DEV.	.96	1.32	.91	1.36	.46	1.45

DEPARTURE BAY 49 12.6 N 123 57.3 W

DATE	APRIL TEMP	APRIL SAL	MAY TEMP	MAY SAL	JUNE TEMP	JUNE SAL
1	* 7.9	*	* 9.3	*	13.9	*
2	8.2	*	* 9.2	*	12.7	*
3	* 8.3	*	9.0	*	13.2	*
4	* 8.4	*	9.2	*	12.6	*
5	8.5	*	10.2	*	* 13.6	*
6	7.0	*	11.2	*	* 14.5	*
7	*	*	10.6	*	15.5	*
8	*	*	* 11.1	*	15.1	*
9	*	*	* 11.5	*	14.5	*
10	*	*	12.0	*	15.7	*
11	*	*	* 11.8	*	18.8	*
12	*	*	11.6	*	* 17.6	*
13	*	*	*	*	* 16.5	*
14	*	*	*	*	15.3	24.49
15	7.8	*	*	*	15.8	25.12
16	*	*	*	*	17.3	23.53
17	*	*	*	*	18.8	19.18
18	*	*	*	*	19.3	19.18
19	*	*	*	*	* 19.7	* 19.85
20	9.8	*	*	*	* 20.2	* 20.53
21	10.5	*	*	*	20.6	21.20
22	* 10.4	*	*	*	19.4	* 21.90
23	10.2	*	*	*	20.3	22.59
24	* 10.1	*	*	*	20.7	20.58
25	* 10.0	*	13.1	*	*	*
26	9.9	*	12.5	*	*	*
27	10.2	*	13.0	*	*	*
28	9.9	*	13.2	*	14.3	27.18
29	9.8	*	* 13.4	*	18.7	15.07
30	9.5	*	* 13.7	*	18.2	17.49
31			13.9	*		
MEANS	9.3	.00	11.6	.00	16.7	21.42
OBSVNS.	12	0	12	0	21	11
MAXIMUM	10.5	.00	13.9	.00	20.7	27.18
MINIMUM	7.0	.00	9.0	.00	12.6	15.07
STD.DEV.	1.12	.00	1.61	.00	2.69	3.59

DEPARTURE BAY 49 12.6 N 123 57.3 W

DATE	JULY TEMP	JULY SAL	AUGUST TEMP	AUGUST SAL	SEPTEMBER 1982 TEMP	SEPTEMBER 1982 SAL
1	*	*	*	*	17.8	22.52
2	*	*	*	*	19.3	20.32
3	*	*	15.0	25.49	18.0	20.77
4	*	*	16.5	20.94	13.5	*
5	*	*	15.2	22.76	* 13.5	*
6	*	*	15.0	24.23	* 13.5	*
7	*	*	* 16.2	* 22.17	13.5	27.39
8	*	*	* 17.3	* 20.10	12.5	27.97
9	*	*	18.5	18.04	12.0	28.32
10	*	*	16.2	21.75	14.9	23.92
11	*	*	14.6	24.98	*	*
12	*	*	15.8	22.84	*	*
13	*	*	15.1	25.36	*	*
14	*	*	*	*	15.7	23.67
15	16.8	16.04	*	*	15.5	23.58
16	16.7	17.22	*	*	16.4	23.95
17	* 17.1	* 18.13	17.5	20.84	16.2	24.48
18	* 17.6	* 19.05	18.0	17.66	* 16.2	* 24.47
19	18.0	19.96	17.7	19.74	* 16.1	* 24.46
20	16.8	22.47	18.2	20.29	16.0	24.45
21	14.9	24.15	* 18.0	* 21.43	15.2	25.04
22	* 16.5	* 20.48	* 17.9	* 22.57	* 15.7	* 24.78
23	18.1	16.81	17.7	23.71	16.2	24.51
24	* 18.8	* 17.03	17.3	24.08	15.0	24.34
25	* 19.6	* 17.24	18.4	24.05	* 14.8	* 24.93
26	20.3	17.45	17.8	24.28	* 14.6	* 25.51
27	19.5	* 19.51	17.0	24.77	14.4	26.10
28	* 18.5	* 21.57	* 16.4	* 25.18	14.0	26.30
29	17.4	23.63	* 15.9	* 25.60	14.0	26.43
30	*	*	15.3	26.01	13.8	26.49
31	*	*	16.7	24.03		
MEANS.	17.6	19.72	16.7	22.79	15.2	24.77
OBSVNS.	9	8	20	20	20	19
MAXIMUM	20.3	24.15	18.5	26.01	19.3	28.32
MINIMUM	14.9	16.04	14.6	17.66	12.0	20.32
STD.DEV.	1.61	3.29	1.31	2.47	1.85	2.17

DEPARTURE BAY 49 12.6 N 123 57.3 W

	OCTOBER		NOVEMBER		DECEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	13.3	26.79	10.2	27.26	8.5	23.73
2	* 13.0	* 27.02	9.5	24.92	* 8.6	* 24.56
3	* 12.8	* 27.24	9.5	25.17	8.7	25.40
4	12.5	27.47	8.7	25.32	* 8.3	* 25.46
5	12.1	27.73	9.8	27.36	* 7.8	* 25.53
6	* 11.2	* 28.42	* 9.8	* 27.90	7.4	25.59
7	10.2	29.12	* 9.9	* 28.43	7.3	25.87
8	*	*	10.0	28.97	6.5	24.28
9	*	*	9.0	25.41	7.3	26.79
10	*	*	8.7	25.32	7.0	26.63
11	*	*	* 8.7	* 25.63	* 7.3	* 26.90
12	12.7	24.85	8.6	25.94	* 7.7	* 27.16
13	13.0	25.15	* 8.4	* 25.96	8.0	27.43
14	13.2	25.42	* 8.2	* 25.99	* 7.9	* 26.19
15	12.5	25.54	8.0	26.01	7.8	24.96
16	* 12.0	* 26.27	8.4	25.64	* 7.8	* 22.11
17	* 11.5	* 27.00	9.7	28.64	7.8	19.26
18	11.0	27.73	9.2	28.28	* 7.8	* 20.77
19	10.8	27.54	8.4	26.78	* 7.9	* 22.28
20	10.8	27.35	* 8.2	* 26.83	8.0	23.79
21	10.8	27.52	* 7.9	* 26.87	7.5	24.62
22	11.0	26.81	7.7	26.92	* 7.6	* 26.04
23	* 10.8	* 26.61	7.5	26.94	7.8	27.46
24	* 10.5	* 26.40	7.5	27.04	6.5	26.02
25	10.3	26.20	7.3	27.15	*	*
26	10.5	21.88	7.7	27.18	*	*
27	10.7	23.86	* 8.2	* 27.33	*	*
28	9.5	*	* 8.7	* 27.48	*	*
29	*	*	9.2	27.63	*	*
30	*	*	8.7	25.68	*	*
31	*	*			*	*
MEANS	11.5	26.31	8.7	26.65	7.6	25.13
OBSVNS.	17	16	21	21	14	14
YRLY.MEANS					11.4	24.60
MAXIMUM	13.3	29.12	10.2	28.97	8.7	27.46
MINIMUM	9.5	21.88	7.3	24.92	6.5	19.26
STD.DEV.	1.20	1.79	.88	1.18	.65	2.09

ENTRANCE ISLAND 49 12.6 N 123 48.4 W

DATE	JANUARY TEMP	JANUARY SAL	FEBRUARY TEMP	FEBRUARY SAL	MARCH TEMP	MARCH SAL
1	6.0	26.8	7.0	27.7	7.8	28.6
2	5.9	26.9	7.0	26.9	7.3	27.8
3	6.0	27.2	6.9	27.4	7.7	28.1
4	6.0	26.9	6.6	27.6	7.0	27.6
5	4.8	27.2	6.5	27.7	7.0	26.4
6	5.8	27.3	6.5	27.7	7.3	26.1
7	7.6	27.8	6.2	27.6	6.5	25.4
8	8.3	28.9	6.1	27.4	7.0	26.8
9	7.8	28.4	6.2	27.7	6.9	26.4
10	* 8.0	* 28.6	6.3	27.6	7.3	27.1
11	8.3	28.9	7.1	28.6	7.4	27.6
12	6.6	26.8	8.0	29.1	7.1	27.6
13	8.2	28.2	8.4	29.3	7.3	27.8
14	7.5	28.1	7.5	28.2	7.1	28.0
15	6.2	27.2	8.0	28.6	7.2	27.8
16	7.8	28.4	7.9	27.4	7.3	27.4
17	7.8	28.2	7.7	26.9	7.2	26.9
18	7.5	28.2	6.9	27.2	7.2	26.8
19	6.3	26.7	8.0	28.1	7.4	26.3
20	7.1	28.2	7.2	27.6	7.8	27.1
21	7.1	28.4	6.0	23.5	7.8	27.2
22	6.2	28.0	6.9	27.6	7.0	27.3
23	6.3	28.1	5.9	25.8	7.5	27.2
24	6.0	27.4	6.5	27.2	7.9	27.3
25	6.0	26.7	7.8	28.5	7.8	27.2
26	7.1	28.2	7.9	28.8	7.7	27.7
27	7.2	27.7	8.0	27.6	7.6	27.8
28	6.8	25.2	7.9	28.6	7.8	28.5
29	6.5	26.9			7.8	28.8
30	7.2	27.8			7.9	28.4
31	7.1	27.8			7.8	28.5
MEANS	6.8	27.6	7.1	27.6	7.4	27.4
OBSVNS.	30	30	28	28	31	31
MAXIMUM	8.3	28.9	8.4	29.3	7.9	28.8
MINIMUM	4.8	25.2	5.9	23.5	6.5	25.4
STD.DEV.	.87	.80	.75	1.10	.36	.79

ENTRANCE ISLAND 49 12.6 N 123 48.4 W

DATE	APRIL TEMP	APRIL SAL	MAY TEMP	MAY SAL	JUNE TEMP	JUNE SAL
1	7.8	28.6	9.5	28.2	12.1	28.4
2	7.9	28.9	9.7	28.2	11.8	28.0
3	8.1	28.6	9.5	28.2	12.4	28.4
4	8.6	28.6	10.5	28.0	13.4	27.2
5	8.8	28.9	12.3	27.8	12.0	27.7
6	7.9	28.2	11.7	28.4	13.1	22.5
7	8.0	27.7	10.1	28.2	13.6	20.0
8	8.1	26.9	10.1	28.2	14.0	23.8
9	8.1	27.7	10.4	28.1	14.0	23.9
10	8.0	27.7	10.8	28.4	15.9	20.6
11	8.0	28.1	10.4	28.1	16.9	17.8
12	8.1	27.6	10.5	28.2	18.6	14.9
13	7.9	28.5	10.5	28.2	17.0	19.7
14	7.8	28.6	10.7	28.2	15.8	23.5
15	7.7	28.4	11.1	28.4	17.0	24.2
16	8.0	28.6	12.0	28.1	18.0	23.9
17	8.2	28.9	12.0	26.1	18.3	18.0
18	8.3	28.6	12.5	21.0	19.6	19.0
19	9.0	27.6	14.8	20.5	20.5	19.9
20	9.3	27.7	13.0	27.4	20.3	19.6
21	10.3	27.4	13.8	27.2	19.8	20.0
22	10.7	27.8	13.3	27.1	20.0	20.5
23	9.4	27.8	12.3	26.9	18.8	22.7
24	9.1	28.0	12.8	27.1	18.8	22.0
25	9.1	27.8	12.0	28.1	19.2	20.9
26	9.3	28.1	11.8	27.7	16.0	23.5
27	9.3	28.0	12.0	27.2	14.1	26.5
28	9.0	28.1	12.1	28.2	* 15.8	* 20.9
29	9.0	28.1	12.0	27.6	17.6	15.2
30	9.1	28.4	13.8	27.6	18.0	17.8
31			14.5	27.7		
MEANS	8.6	28.1	11.7	27.4	16.4	22.1
OBSVNS.	30	30	31	31	29	29
MAXIMUM	10.7	28.9	14.8	28.4	20.5	28.4
MINIMUM	7.7	26.9	9.5	20.5	11.8	14.9
STD.DEV.	.76	.49	1.44	1.85	2.82	3.80

ENTRANCE ISLAND 49 12.6 N 123 48.4 W

	JULY		AUGUST		SEPTEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	14.0	24.7	13.0	25.6	17.9	22.2
2	14.9	25.4	13.9	25.5	18.6	22.1
3	13.0	27.1	14.0	25.6	17.8	21.7
4	15.0	24.8	16.0	23.4	16.4	22.2
5	15.0	24.3	15.1	20.8	14.8	24.6
6	13.9	25.5	14.7	23.5	13.2	27.1
7	15.3	20.6	16.9	17.6	13.5	26.8
8	15.0	22.9	17.8	16.7	12.7	27.4
9	15.3	17.8	17.9	17.6	11.2	28.6
10	15.8	22.9	15.2	22.4	15.0	25.5
11	17.1	17.3	14.9	25.0	13.4	26.4
12	17.8	18.0	17.0	19.2	14.6	25.8
13	18.1	17.0	16.4	22.7	14.9	25.8
14	16.0	21.2	17.0	20.3	15.3	25.9
15	16.9	15.2	16.9	23.5	16.8	25.8
16	17.4	15.4	16.1	24.2	16.8	26.0
17	18.3	18.7	18.0	20.5	16.5	26.3
18	18.0	20.0	17.2	17.0	17.6	26.5
19	18.1	20.9	17.3	19.5	16.8	24.2
20	16.5	21.8	17.0	20.0	16.0	23.7
21	13.5	25.0	16.5	22.0	15.6	24.7
22	16.1	20.8	16.2	22.6	14.8	26.3
23	16.9	17.9	16.0	23.8	15.0	26.0
24	17.3	16.1	16.2	23.9	15.2	26.1
25	18.0	16.9	17.0	25.4	14.8	27.8
26	19.1	17.0	17.2	23.8	15.2	27.2
27	20.4	17.1	14.9	25.2	14.6	27.4
28	17.7	20.9	14.8	26.1	13.2	26.7
29	14.8	25.5	13.9	26.8	13.4	26.9
30	14.4	25.5	14.1	25.4	13.8	29.1
31	12.8	26.9	16.5	25.0		
MEANS	16.2	21.0	16.0	22.6	15.2	25.8
OBSVNS.	31	31	31	31	30	30
MAXIMUM	20.4	27.1	18.0	26.8	18.6	29.1
MINIMUM	12.8	15.2	13.0	16.7	11.2	21.7
STD.DEV.	1.88	3.73	1.34	2.93	1.72	1.88

ENTRANCE ISLAND 49 12.6 N 123 48.4 W

DATE	OCTOBER TEMP	OCTOBER SAL	NOVEMBER TEMP	NOVEMBER SAL	DECEMBER 1982 TEMP	DECEMBER 1982 SAL
1	13.1	27.6	10.0	26.3	9.2	28.8
2	12.3	27.6	9.2	26.3	9.2	28.4
3	12.4	27.4	9.8	25.6	9.5	29.0
4	12.1	27.6	10.0	27.2	8.8	28.6
5	11.8	27.4	10.0	27.8	8.5	26.9
6	10.8	27.8	9.2	28.1	7.5	25.0
7	10.3	28.6	10.0	28.9	7.2	25.8
8	10.5	28.5	9.8	28.8	7.0	25.9
9	11.1	27.7	9.4	28.9	7.4	26.3
10	12.0	26.1	9.0	25.2	7.5	26.9
11	12.6	27.2	8.0	26.9	7.0	26.7
12	12.5	26.8	8.2	25.4	8.4	27.6
13	12.6	26.3	8.5	25.9	8.1	27.4
14	13.2	26.8	8.0	25.9	9.0	28.1
15	12.8	26.5	7.4	25.4	8.9	28.6
16	13.2	27.4	9.8	28.1	9.1	28.8
17	10.5	27.6	9.1	27.7	9.0	28.8
18	10.8	26.9	9.1	28.0	8.8	28.4
19	10.7	27.7	8.5	26.8	9.0	28.9
20	10.8	27.2	8.2	26.4	8.2	26.9
21	10.4	26.9	8.0	26.5	9.0	28.9
22	10.5	29.7	8.0	26.4	9.2	27.6
23	10.2	30.0	7.8	26.5	7.8	27.2
24	10.0	29.4	7.2	26.4	7.8	26.9
25	10.1	29.3	6.9	26.3	8.8	28.6
26	9.8	29.4	9.0	27.4	7.8	27.7
27	10.5	27.3	9.3	28.1	7.0	27.1
28	10.3	28.1	9.4	28.4	7.0	26.9
29	10.3	26.1	9.5	28.8	6.8	27.1
30	10.1	26.9	9.3	28.6	6.5	26.8
31	10.0	25.9			6.0	26.9
MEANS	11.2	27.6	8.9	27.1	8.1	27.5
OBSVNS.	31	31	30	30	31	31
YRLY.MEANS					11.2	26.0
MAXIMUM	13.2	30.0	10.0	28.9	9.5	29.0
MINIMUM	9.8	25.9	6.9	25.2	6.0	25.0
STD.DEV.	1.13	1.08	.90	1.17	.97	1.06

WEST VANCOUVER 49 20.3 N 123 14.1 W

DATE	JANUARY TEMP		SAL	FEBRUARY TEMP		SAL	MARCH TEMP		SAL	1982
1	6.7	*		5.0	*		6.8	*		
2	7.0	*		6.1	*		6.2	*		
3	6.8	*		6.0	*		6.5	*		
4	6.9	*		4.0	*		6.1	*		
5	6.7	*		4.8	*		7.1	*		
6	5.1	*		6.7	*		7.0	*		
7	4.9	*		6.5	*		7.2	*		
8	6.0	*		5.0	*		7.0	*		
9	6.1	*		5.1	*		7.0	*		
10	6.0	*		4.8	*		6.8	*		
11	6.0	*		4.9	*		7.0	*		
12	5.5	*		4.7	*		6.9	*		
13	6.5	*		5.5	*		6.3	*		
14	7.0	*		5.9	*		6.8	*		
15	7.0	*		6.8	*		6.9	*		
16	6.3	*		5.8	*		6.5	*		
17	6.1	*		6.1	*		7.0	*		
18	5.2	*		6.0	*		7.1	*		
19	5.1	*		6.3	*		6.9	*		
20	6.1	*		6.3	*		7.3	*		
21	4.6	*		6.0	*		7.7	*		
22	3.6	*		6.1	*		7.6	*		
23	5.8	*		6.3	*		7.1	*		
24	5.4	*		5.3	*		7.6	*		
25	5.5	*		6.0	*		7.7	*		
26	5.2	*		5.5	*		7.5	*		
27	5.1	*		6.3	*		7.0	*		
28	6.1	*		6.7	*		7.0	*		
29	6.0	*					7.0	*		
30	5.3	*					7.1	*		
31	5.6	*					7.1	*		
MEANS	5.8		.0	5.7		.0	7.0		.0	
OBSVNS.	31		0	28		0	31		0	
MAXIMUM	7.0		.0	6.8		.0	7.7		.0	
MINIMUM	3.6		.0	4.0		.0	6.1		.0	
STD.DEV.	.80		.00	.72		.00	.40		.00	

WEST VANCOUVER 49 20.3 N 123 14.1 W

DATE	APRIL TEMP		APRIL SAL	MAY TEMP		MAY SAL	JUNE TEMP		JUNE SAL
1	6.8	*		8.9	*		12.0	*	
2	6.9	*		9.0	*		11.8	*	
3	6.9	*		9.0	*		12.1	*	
4	7.2	*		8.9	*		12.8	*	
5	7.2	*		9.0	*		10.7	*	
6	7.1	*		9.5	*		11.0	*	
7	7.0	*		10.1	*		11.0	*	
8	8.0	*		9.5	*		12.1	*	
9	8.6	*		10.0	*		12.2	*	
10	8.0	*		10.1	*		11.9	*	
11	8.0	*		10.9	*		13.9	*	
12	7.9	*		10.9	*		15.0	*	
13	8.1	*		10.9	*		15.9	*	
14	8.0	*		10.8	*		15.1	*	
15	7.9	*		11.5	*		15.2	*	
16	7.9	*		9.5	*		15.3	*	
17	7.8	*		9.6	*		15.7	*	
18	8.0	*		9.7	*		16.1	*	
19	8.1	*		9.8	*		17.1	*	
20	8.0	*		9.7	*		15.0	*	
21	8.1	*		9.8	*		15.2	*	
22	8.4	*		11.0	*		16.0	*	
23	8.2	*		13.0	*		15.0	*	
24	8.1	*		12.5	*		17.5	*	
25	8.3	*		12.1	*		16.0	*	
26	8.1	*		12.3	*		15.8	*	
27	8.0	*		12.4	*		17.1	*	
28	8.5	*		12.5	*		18.0	*	
29	8.7	*		12.7	*		19.0	*	
30	8.6	*		12.6	*		18.5	*	
31				12.1	*				
MEANS	7.9		.0	10.7		.0	14.7		.0
OBSVNS.	30		0	31		0	30		0
MAXIMUM	8.7		.0	13.0		.0	19.0		.0
MINIMUM	6.8		.0	8.9		.0	10.7		.0
STD.DEV.	.54		.00	1.35		.00	2.38		.00

WEST VANCOUVER 49 20.3 N 123 14.1 W

DATE	JULY TEMP		SAL	AUGUST TEMP		SAL	SEPTEMBER 1982 TEMP		SAL
1	15.0	*		16.2	*		17.3	*	
2	14.4	*		16.3	*		16.2	*	
3	14.3	*		15.1	*		16.0	*	
4	14.0	*		15.2	*		16.0	*	
5	13.1	*		12.9	*		16.0	*	
6	13.5	*		16.0	*		15.5	*	
7	16.2	*		16.1	*		16.2	*	
8	15.1	*		16.5	*		16.1	*	
9	16.2	*		17.1	*		14.8	*	
10	15.7	*		17.1	*		15.1	*	
11	17.2	*		17.0	*		14.2	*	
12	17.4	*		16.5	*		14.1	*	
13	17.8	*		17.8	*		13.6	*	
14	18.0	*		16.9	*		13.1	*	
15	15.6	*		17.0	*		13.2	*	
16	15.7	*		17.0	*		13.0	*	
17	16.2	*		16.8	*		13.2	*	
18	16.0	*		17.1	*		14.1	*	
19	15.8	*		16.9	*		14.2	*	
20	15.2	*		16.9	*		15.0	*	
21	15.3	*		16.8	*		14.9	*	
22	15.2	*		15.9	*		14.6	*	
23	16.0	*		14.8	*		14.8	*	
24	15.6	*		15.0	*		14.2	*	
25	15.7	*		15.2	*		14.1	*	
26	15.6	*		15.3	*		14.0	*	
27	15.8	*		16.8	*		13.8	*	
28	15.9	*		16.9	*		12.5	*	
29	15.8	*		16.8	*		* 12.7	*	
30	15.2	*		17.0	*		* 12.9	*	
31	16.1	*		15.2	*				
MEANS	15.6		.0	16.3		.0	14.6		.0
OBSVNS.	31		0	31		0	28		0
MAXIMUM	18.0		.0	17.8		.0	17.3		.0
MINIMUM	13.1		.0	12.9		.0	12.5		.0
STD.DEV.	1.09		.00	1.01		.00	1.19		.00

WEST VANCOUVER 49 20.3 N 123 14.1 W

	OCTOBER			NOVEMBER			DECEMBER		1982
DATE	TEMP		SAL	TEMP		SAL	TEMP		SAL
1	13.1	*		9.5	*		7.5	*	
2	12.0	*		8.0	*		7.5	*	
3	12.2	*		8.5	*		8.0	*	
4	11.4	*		9.0	*		* 7.7	*	
5	11.2	*		8.5	*		* 7.3	*	
6	11.6	*		8.5	*		7.0	*	
7	10.9	*		8.5	*		7.0	*	
8	11.0	*		8.5	*		7.5	*	
9	11.5	*		8.5	*		7.5	*	
10	11.4	*		8.5	*		7.5	*	
11	11.6	*		8.0	*		* 7.5	*	
12	11.8	*		8.0	*		* 7.5	*	
13	11.7	*		8.0	*		7.5	*	
14	12.0	*		8.0	*		7.0	*	
15	12.1	*		7.0	*		7.0	*	
16	10.2	*		7.5	*		7.0	*	
17	9.1	*		8.5	*		7.0	*	
18	9.6	*		7.5	*		* 7.2	*	
19	8.3	*		8.5	*		* 7.3	*	
20	10.0	*		7.0	*		7.5	*	
21	10.0	*		6.0	*		7.0	*	
22	10.0	*		4.5	*		7.0	*	
23	10.0	*		5.0	*		7.5	*	
24	10.0	*		5.5	*		7.0	*	
25	10.5	*		6.0	*		*	*	
26	10.0	*		7.0	*		*	*	
27	9.5	*		* 6.8	*		*	*	
28	9.5	*		* 6.7	*		*	*	
29	9.5	*		6.5	*		5.5	*	
30	9.5	*		7.5	*		5.5	*	
31	9.5	*					6.0	*	
MEANS	10.7		.0	7.6		.0	7.0		.0
OBSVNS.	31		0	28		0	21		0
YRLY.MEANS							10.4		.0
MAXIMUM	13.1		.0	9.5		.0	8.0		.0
MINIMUM	8.3		.0	4.5		.0	5.5		.0
STD.DEV.	1.14		.00	1.25		.00	.65		.00

ACTIVE PASS 48 52.4 N 123 17.4 W

	JANUARY		FEBRUARY		MARCH	1982
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	7.2	27.6	6.8	26.5	8.1	29.5
2	6.0	26.4	6.7	26.8	8.1	29.7
3	5.1	23.9	6.8	27.4	7.9	29.9
4	5.2	25.8	6.7	28.2	7.9	28.5
5	* 5.2	* 25.8	6.8	27.4	7.2	21.3
6	5.2	25.9	6.8	27.8	7.2	23.3
7	7.1	28.8	6.8	25.1	7.3	25.2
8	8.2	29.7	6.7	26.8	8.0	24.7
9	8.1	29.5	6.5	27.4	8.1	27.2
10	8.0	29.3	6.6	29.0	7.9	27.7
11	8.1	28.0	7.1	29.1	* 7.5	* 26.9
12	8.0	29.5	7.8	29.9	7.2	26.1
13	8.0	29.5	7.8	29.9	7.2	28.1
14	7.0	27.6	8.0	29.9	7.9	28.1
15	7.1	28.4	8.1	30.0	7.0	28.0
16	7.2	27.8	8.0	30.0	7.0	28.1
17	7.2	28.0	8.0	30.3	7.8	24.6
18	6.8	28.2	8.1	30.0	7.9	24.6
19	6.2	26.1	8.8	29.8	8.2	24.2
20	6.8	27.3	8.1	29.0	8.8	25.1
21	7.1	29.1	7.2	26.3	8.7	25.4
22	6.2	27.2	8.0	29.3	8.8	26.8
23	7.2	28.0	7.5	28.8	9.5	26.5
24	7.7	28.9	7.7	29.8	8.9	27.6
25	7.5	28.8	8.1	29.3	9.4	28.2
26	8.0	28.8	7.7	29.5	9.0	28.5
27	7.8	29.5	7.1	29.7	8.8	29.1
28	7.1	28.4	7.9	30.2	8.2	29.1
29	7.0	28.1			7.8	28.9
30	7.2	28.5			7.8	29.3
31	7.0	28.4			8.0	28.8
MEANS	7.1	28.0	7.4	28.7	8.1	27.1
OBSVNS.	30	30	28	28	30	30
MAXIMUM	8.2	29.7	8.8	30.3	9.5	29.9
MINIMUM	5.1	23.9	6.5	25.1	7.0	21.3
STD.DEV.	.87	1.34	.64	1.44	.69	2.16

ACTIVE PASS 48 52.4 N 123 17.4 W

	APRIL		MAY		JUNE		1982
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL	
1	8.1	29.5	10.1	29.1	12.2	29.1	
2	9.0	29.8	10.2	28.2	11.3	27.3	
3	9.1	27.6	9.8	28.1	11.9	28.9	
4	8.9	29.1	10.3	26.8	12.1	25.8	
5	9.1	29.0	10.3	27.8	12.0	23.4	
6	8.9	26.3	11.2	26.8	11.1	28.1	
7	9.1	26.5	10.3	22.5	12.1	28.2	
8	8.9	27.8	11.3	25.1	11.9	27.6	
9	8.9	27.3	11.0	26.9	13.0	25.2	
10	8.7	27.2	11.0	28.5	13.5	21.0	
11	8.7	28.1	10.3	29.1	14.2	19.2	
12	8.8	27.4	11.0	29.1	13.9	22.6	
13	8.2	28.8	11.2	28.6	12.1	27.2	
14	7.9	28.8	10.1	28.6	12.2	28.9	
15	8.1	29.1	10.9	29.4	13.2	28.6	
16	8.0	29.1	11.2	27.1	14.0	25.5	
17	8.9	28.8	12.1	24.2	19.2	8.4	
18	9.2	28.1	11.8	26.1	18.8	13.5	
19	9.5	27.3	11.9	25.9	22.1	10.1	
20	11.0	24.0	12.8	24.0	18.3	18.8	
21	11.1	25.0	15.0	15.0	18.3	17.3	
22	10.3	27.8	11.9	24.7	17.9	20.1	
23	9.8	25.4	10.8	29.4	19.1	19.9	
24	9.8	26.7	10.2	29.1	19.8	14.0	
25	10.1	26.8	12.5	21.0	12.3	27.6	
26	10.2	28.5	12.0	26.0	13.3	25.5	
27	9.1	28.2	12.2	27.3	13.7	25.4	
28	10.1	28.4	12.2	27.6	17.1	7.6	
29	9.5	27.7	12.8	23.9	19.5	7.2	
30	9.2	28.1	12.2	27.2	16.1	23.7	
31			13.2	28.2			
MEANS	9.2	27.7	11.4	26.5	14.9	21.9	
OBSVNS.	30	30	31	31	30	30	
MAXIMUM	11.1	29.8	15.0	29.4	22.1	29.1	
MINIMUM	7.9	24.0	9.8	15.0	11.1	7.2	
STD.DEV.	.82	1.35	1.15	3.01	3.22	6.91	

ACTIVE PASS 48 52.4 N 123 17.4 W

	JULY		AUGUST		SEPTEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	16.0	25.0	12.0	27.8	15.2	24.3
2	12.1	28.9	13.3	27.3	19.0	13.6
3	11.1	29.4	12.9	27.2	13.5	25.8
4	11.2	28.9	14.0	26.9	12.1	28.1
5	12.7	28.9	12.8	26.5	12.2	28.0
6	14.3	29.3	17.7	15.2	11.8	28.2
7	12.5	28.8	17.8	14.6	11.5	28.1
8	14.2	25.2	17.8	17.0	11.6	28.1
9	16.1	21.7	14.4	24.0	12.3	26.9
10	14.9	20.9	13.4	25.8	17.3	12.3
11	13.8	26.3	13.2	26.1	11.9	28.2
12	13.1	27.2	15.8	18.0	14.9	17.0
13	12.6	27.4	14.0	25.6	15.3	15.4
14	15.0	17.3	15.0	23.4	15.8	14.2
15	16.3	11.2	13.7	26.0	15.4	22.5
16	14.5	22.9	14.3	26.1	14.0	25.6
17	18.1	13.5	17.1	20.4	16.0	24.6
18	17.2	14.0	17.6	11.1	14.3	23.7
19	15.2	25.1	18.2	16.6	13.9	24.8
20	13.8	26.3	17.9	16.3	14.2	24.6
21	13.5	26.3	17.5	20.1	14.4	24.3
22	13.3	24.7	17.0	20.3	14.9	24.6
23	17.5	12.0	16.5	21.3	15.9	19.7
24	18.2	11.8	16.5	23.5	14.2	24.7
25	17.8	18.8	15.9	24.3	14.3	22.9
26	17.9	23.9	16.2	24.6	14.5	15.0
27	17.9	19.9	14.3	25.6	13.8	23.9
28	17.7	24.3	15.0	25.9	13.9	26.0
29	14.8	24.6	15.0	25.9	* 13.5	* 26.1
30	12.9	29.0	14.7	25.8	13.0	26.3
31	13.1	29.3	14.3	25.9		
MEANS	14.8	23.3	15.3	22.7	14.2	23.2
OBSVNS.	31	31	31	31	29	29
MAXIMUM	18.2	29.4	18.2	27.8	19.0	28.2
MINIMUM	11.1	11.2	12.0	11.1	11.5	12.3
STD.DEV.	2.18	5.79	1.82	4.54	1.75	4.91

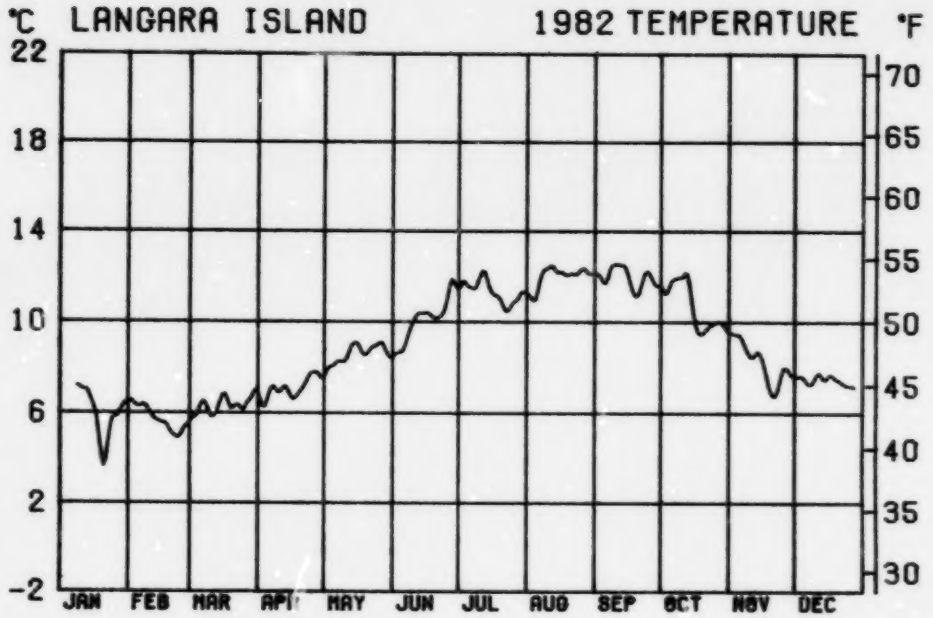
ACTIVE PASS 48 52.4 N 123 17.4 W

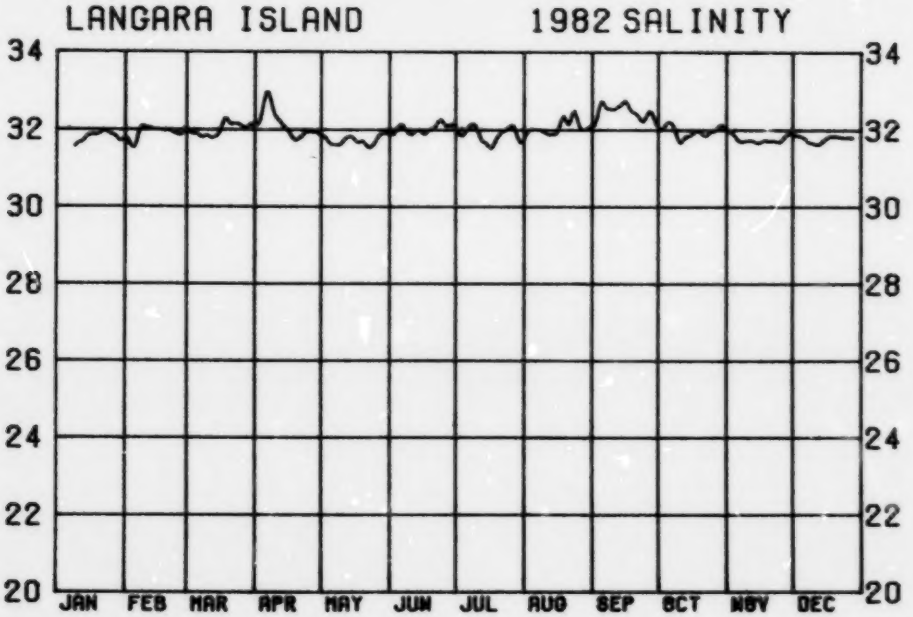
	OCTOBER		NOVEMBER		DECEMBER 1982	
DATE	TEMP	SAL	TEMP	SAL	TEMP	SAL
1	12.8	25.9	10.0	22.4	9.3	30.4
2	11.6	26.4	9.8	24.8	9.0	30.3
3	11.9	25.2	9.8	28.4	9.2	29.7
4	12.3	28.0	10.0	28.9	9.5	29.9
5	12.2	28.0	10.0	28.9	8.8	29.8
6	11.1	28.9	9.9	28.0	7.2	21.0
7	10.8	28.6	9.5	29.1	7.1	22.2
8	10.6	28.8	9.4	27.4	7.7	23.7
9	11.2	23.5	9.1	26.5	7.0	24.6
10	12.0	21.2	9.2	25.2	7.2	26.4
11	12.4	17.3	8.5	21.8	7.2	27.3
12	12.5	16.3	8.8	24.8	7.9	27.4
13	13.0	24.2	8.5	24.2	7.8	26.5
14	12.2	25.4	7.8	23.1	8.9	29.9
15	11.9	27.7	8.9	27.7	9.1	29.5
16	10.9	28.4	9.6	29.0	9.1	30.4
17	11.0	25.2	9.5	29.3	8.8	29.5
18	11.0	28.0	* 9.3	* 29.2	8.3	29.7
19	11.1	24.6	9.1	29.0	8.3	29.1
20	10.2	27.2	9.1	24.7	8.2	29.5
21	10.2	28.2	9.5	24.4	8.5	29.9
22	10.8	29.4	7.9	24.2	8.8	29.3
23	12.0	28.8	7.2	25.2	8.2	29.1
24	11.9	28.2	6.9	25.1	8.2	28.9
25	10.9	29.9	7.7	27.6	8.3	29.0
26	10.1	29.4	8.2	28.4	* 7.7	* 27.7
27	10.1	29.7	9.5	27.2	7.0	26.3
28	10.1	29.1	9.2	29.7	7.1	26.4
29	* 10.1	* 28.0	9.2	29.7	7.2	28.0
30	10.0	26.9	9.3	30.0	6.8	25.0
31	10.3	28.5			7.2	28.4
MEANS	11.3	26.6	9.0	26.7	8.1	27.9
OBSVNS.	30	30	29	29	30	30
YRLY.MEANS.....					10.9	25.8
MAXIMUM	13.0	29.9	10.0	30.0	9.5	30.4
MINIMUM	10.0	16.3	6.9	21.8	6.8	21.0
STD.DEV.	.90	3.36	.85	2.41	.84	2.51

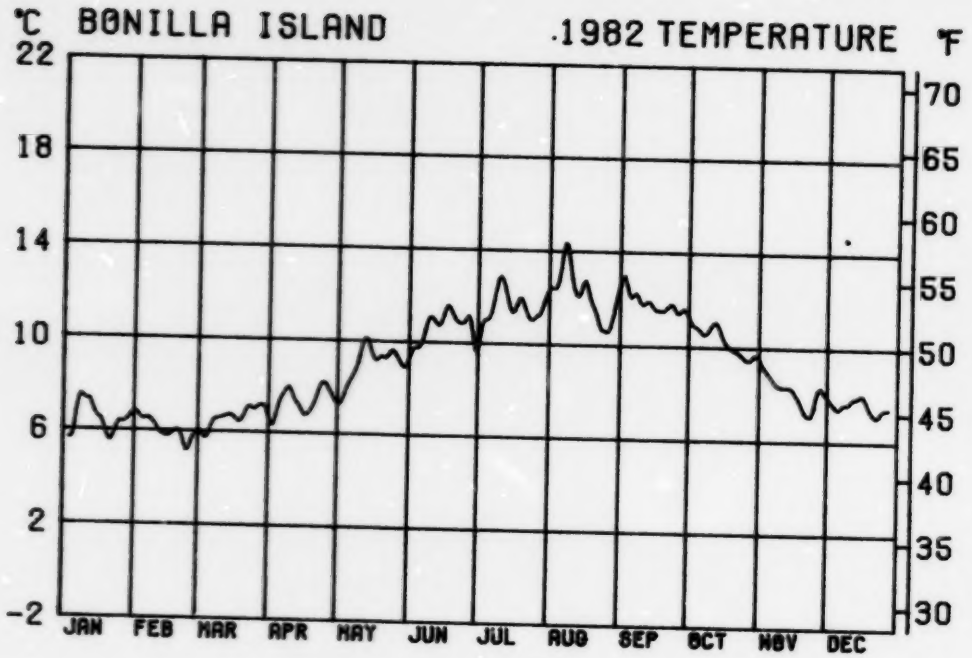
Annual Graphs of the 7-day
Normally-Weighted Running Means
for Temperature and Salinity
1982

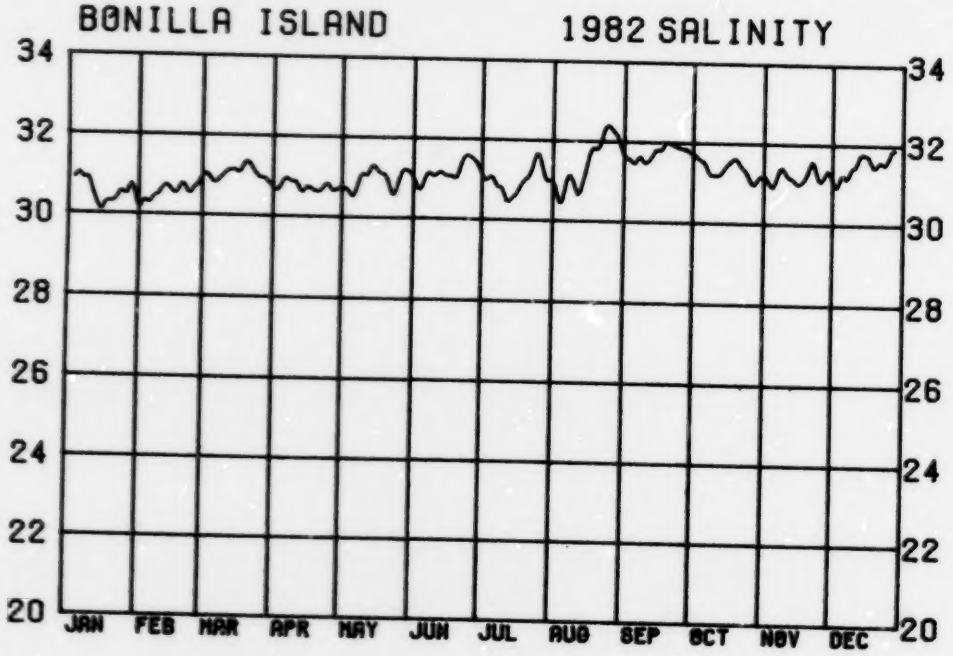
TEMP: Temperature (^{o}C and ^{o}F)

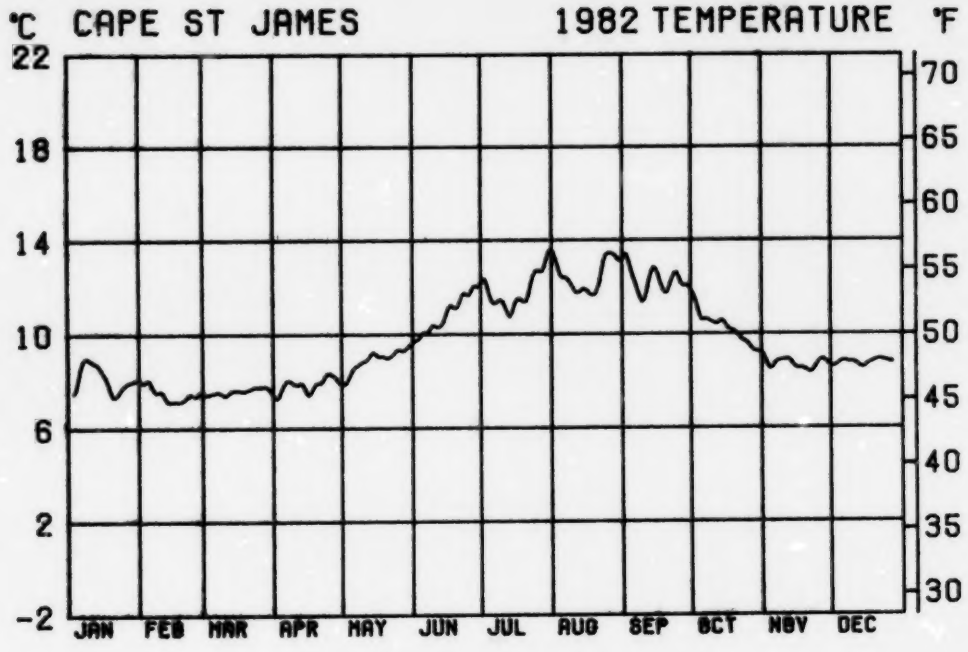
SAL: Salinity ($^{o}/oo$)

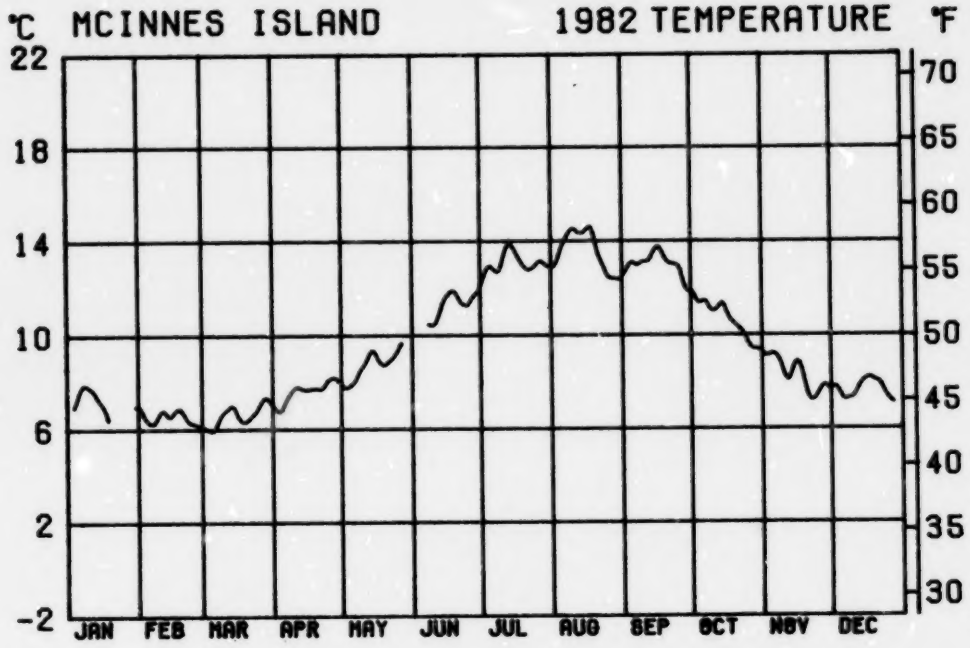

°C LANGARA ISLAND 1982 TEMPERATURE °F
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

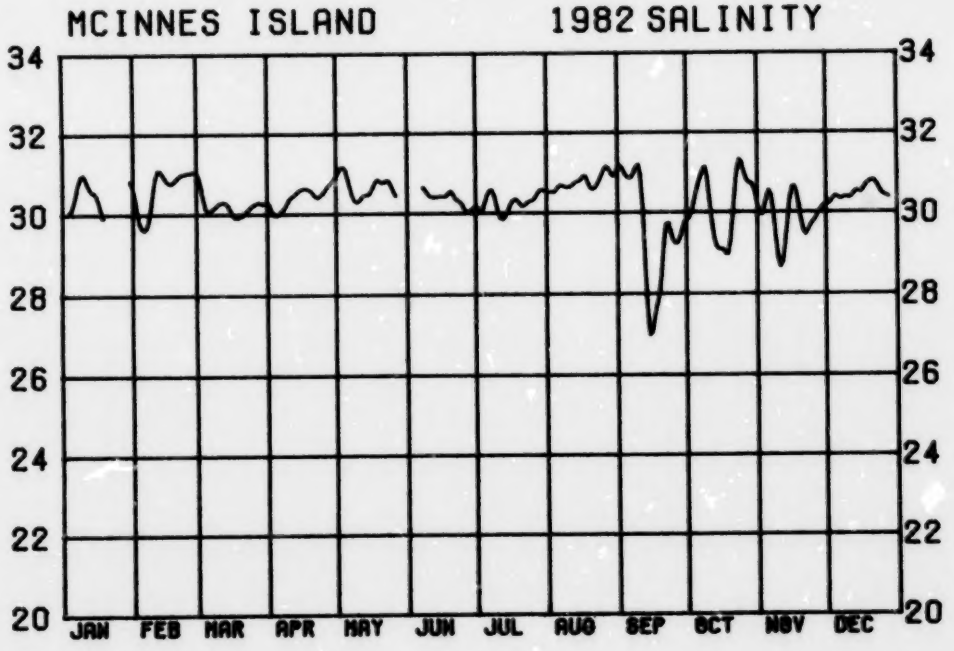

LANGARA ISLAND 1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

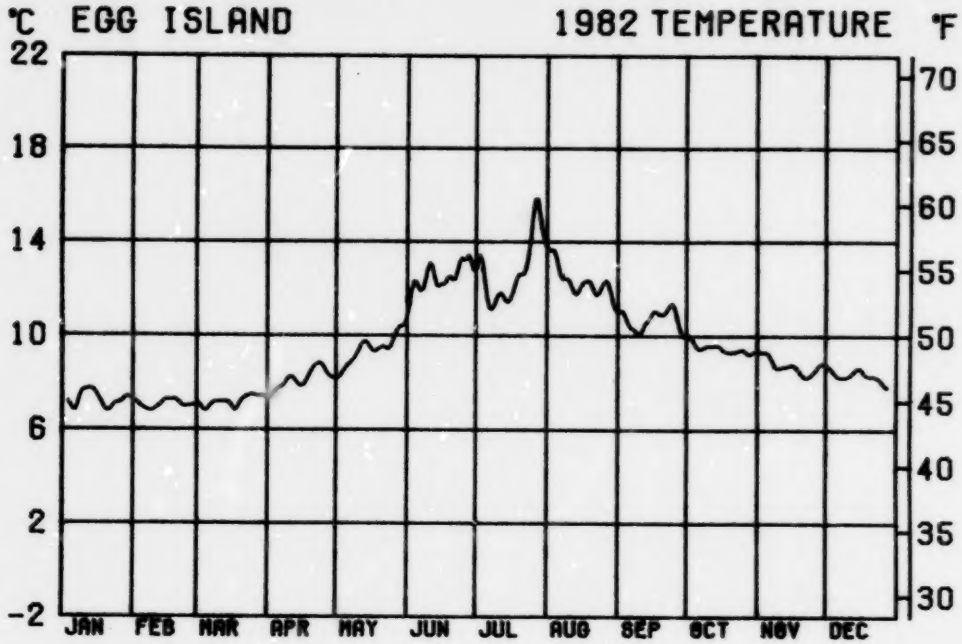

°C BONILLA ISLAND 1982 TEMPERATURE °F
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

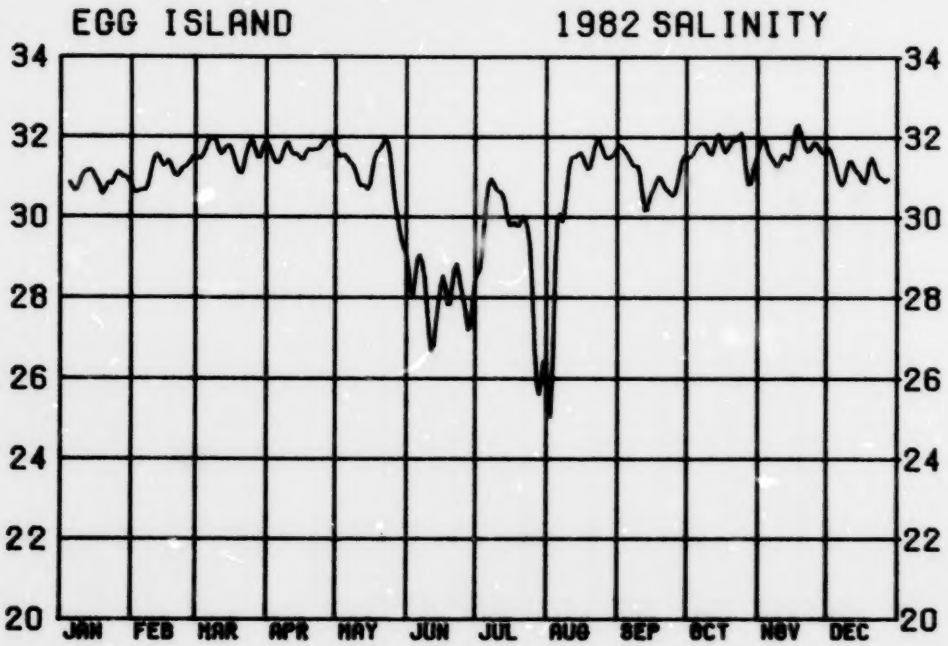

BONILLA ISLAND 1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

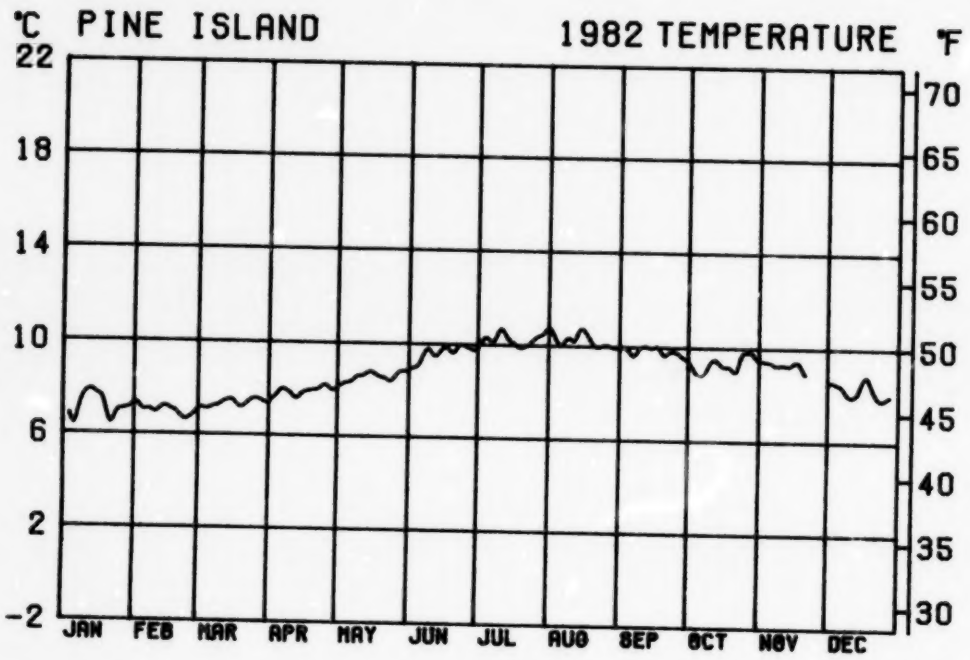

°C
CAPE ST JAMES
1982 TEMPERATURE
°F
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC

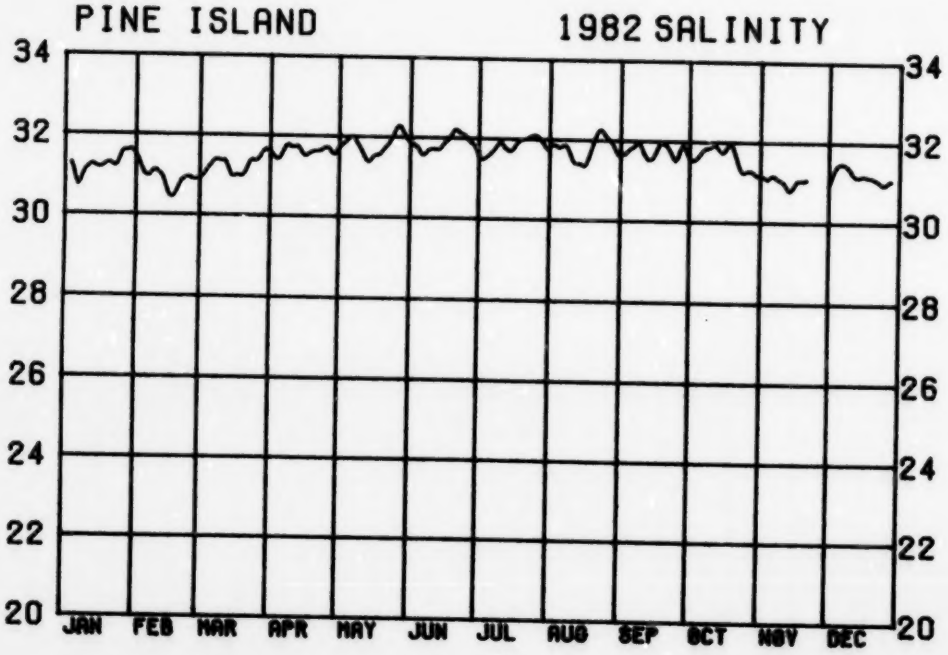

℃ MCINNES ISLAND 1982 TEMPERATURE ℉
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

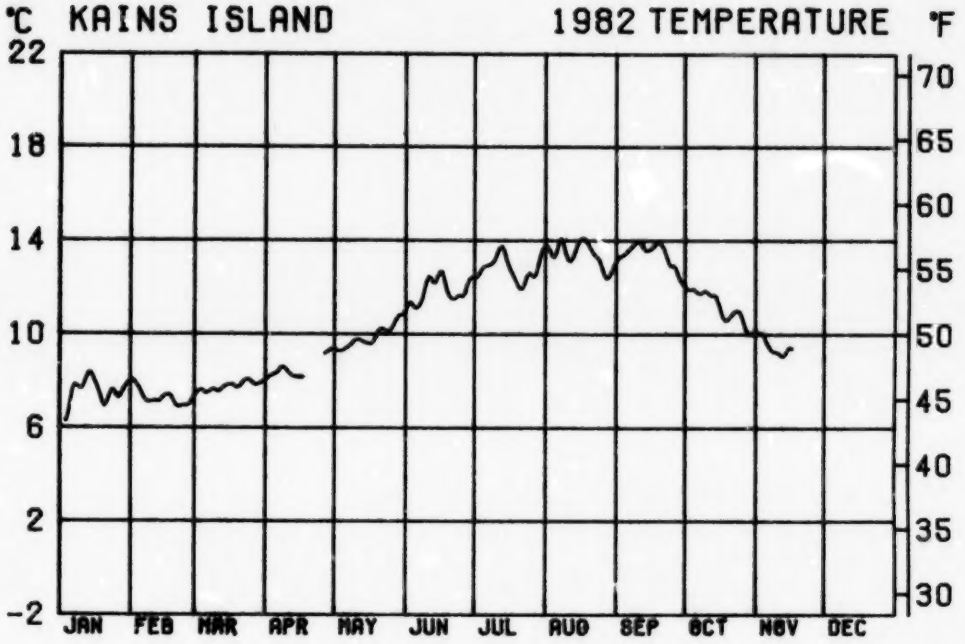

MCINNES ISLAND 1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

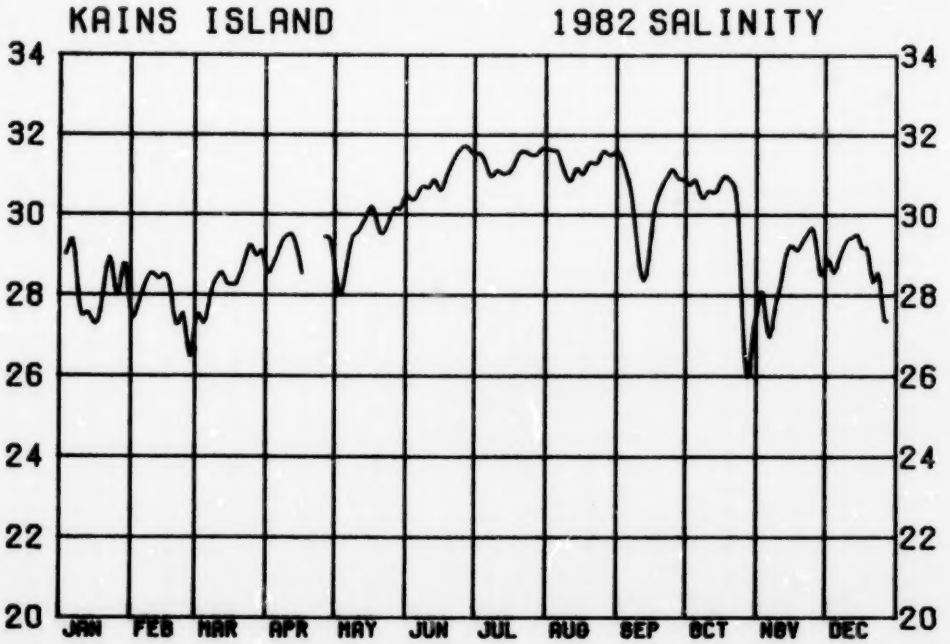

℃ EGG ISLAND
1982 TEMPERATURE ℉
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

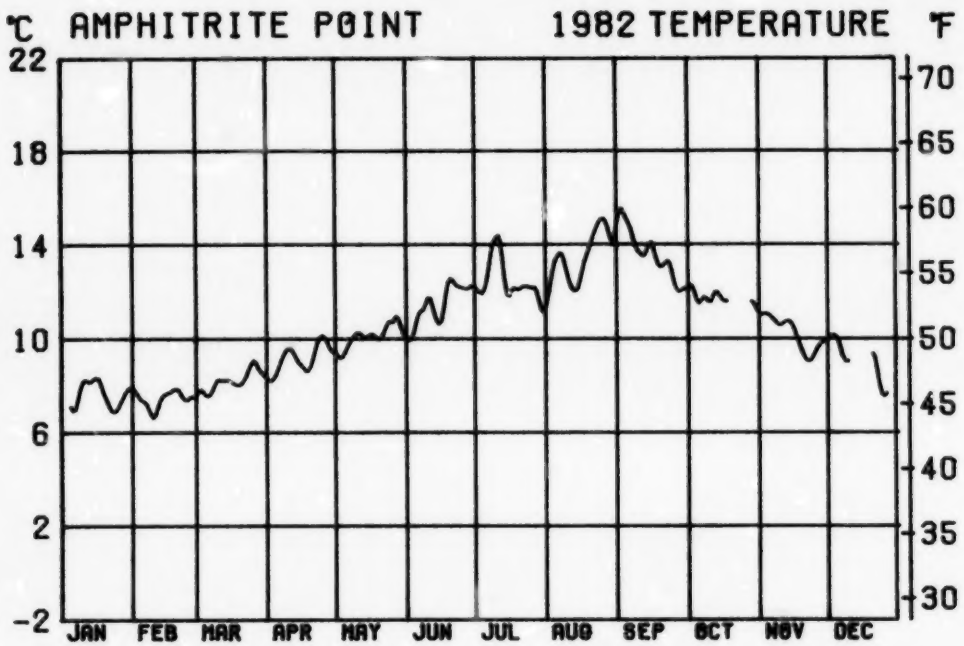

EGG ISLAND
1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

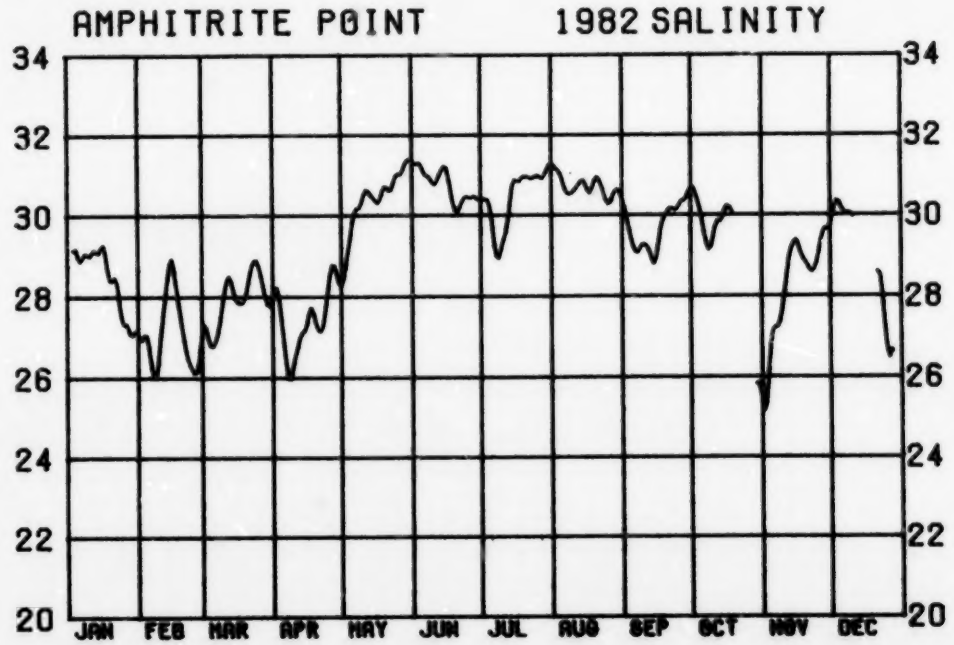

°C PINE ISLAND
1982 TEMPERATURE °F
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

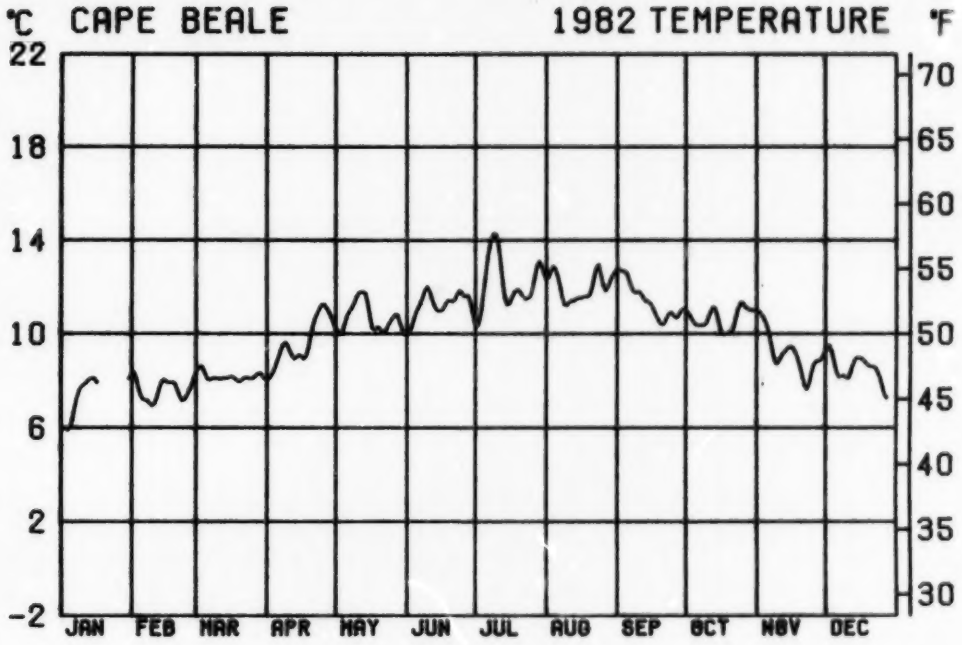

PINE ISLAND
1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

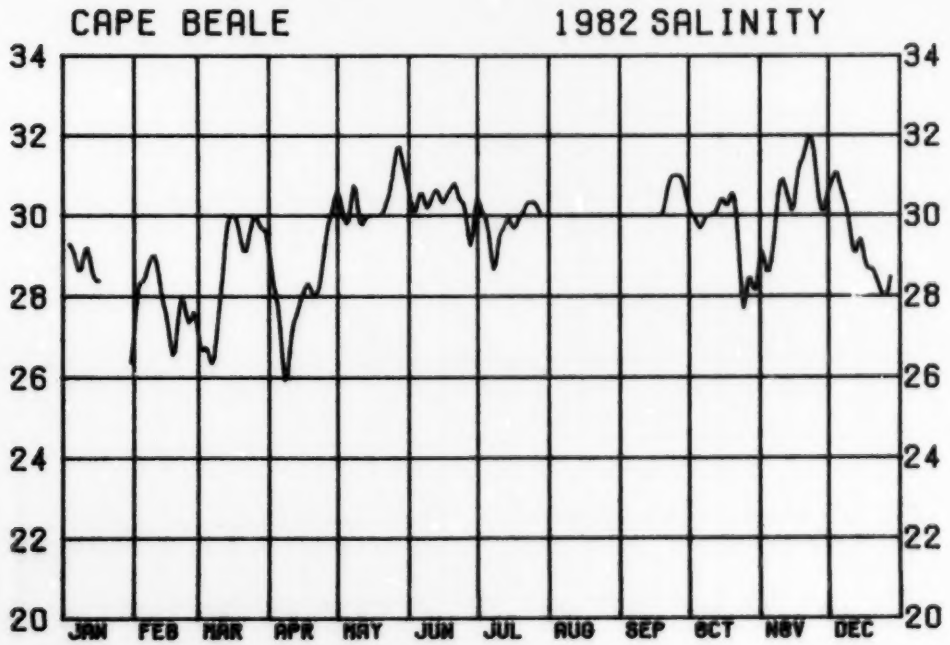

°C KAINS ISLAND 1982 TEMPERATURE °F
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

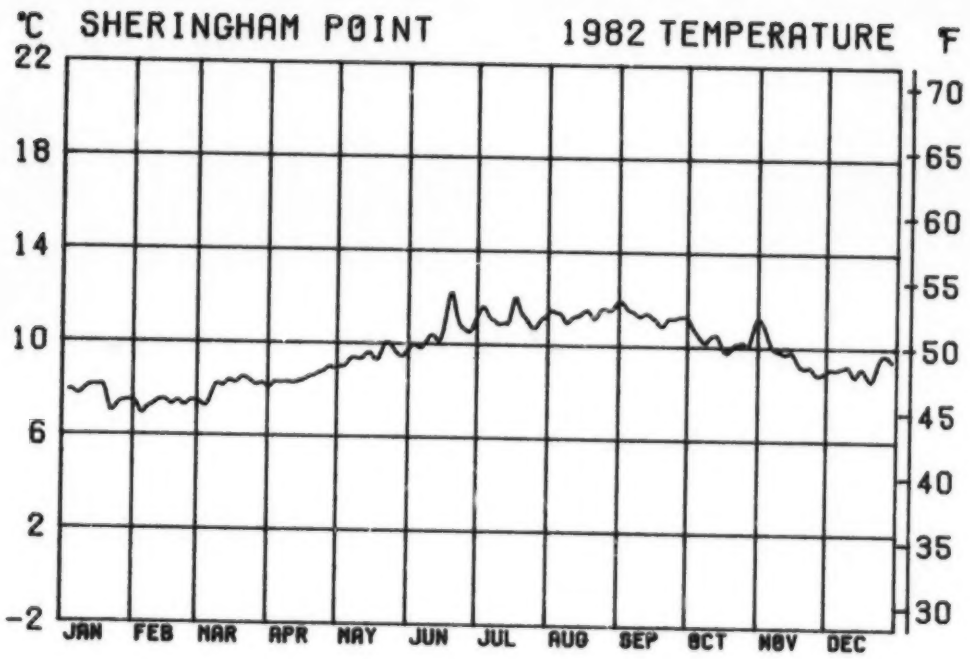

KAINS ISLAND 1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

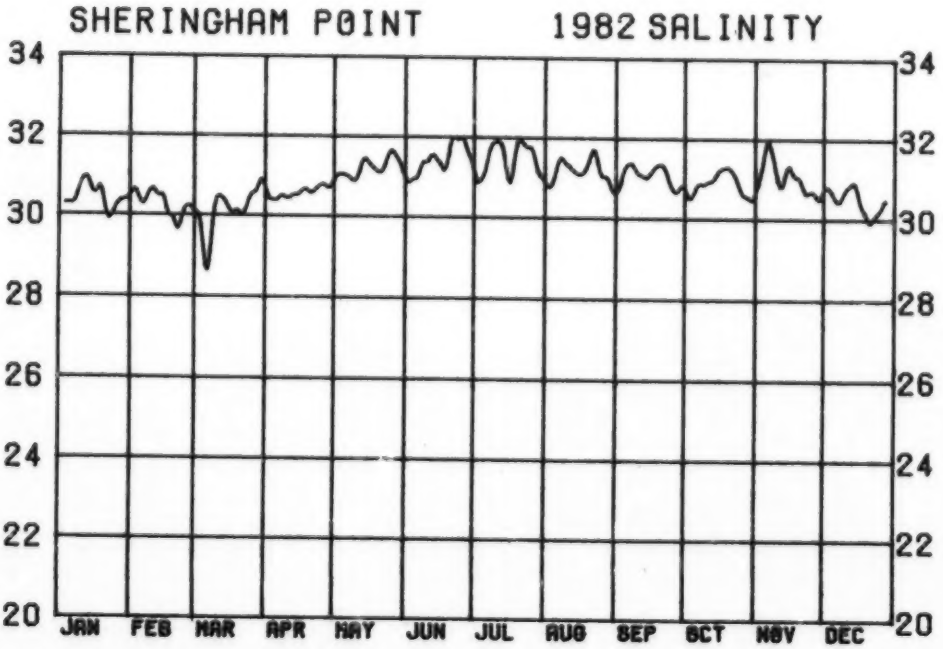

℃ AMPHITRITE POINT 1982 TEMPERATURE ℉
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

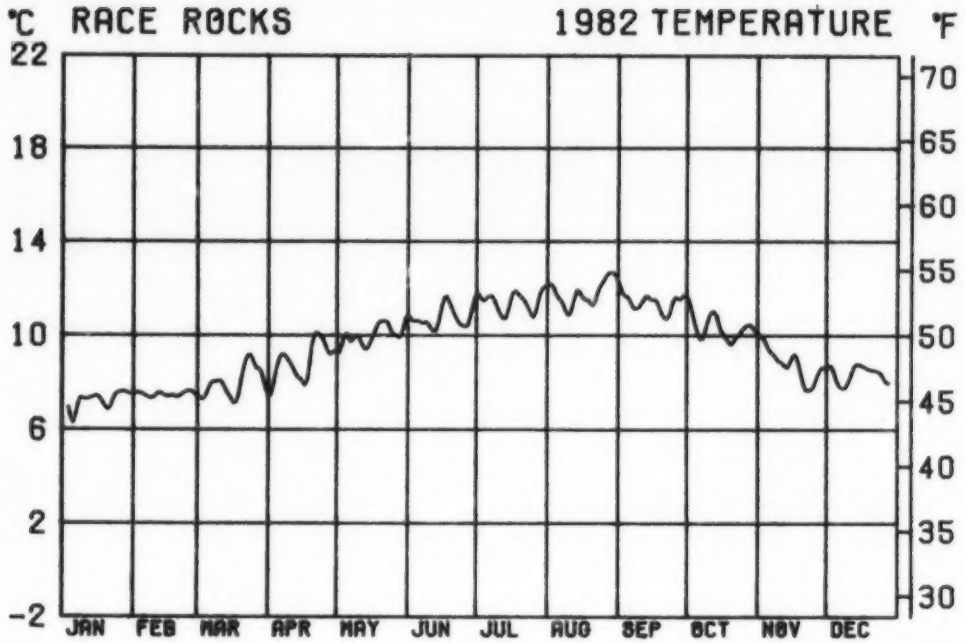

AMPHITRITE POINT 1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

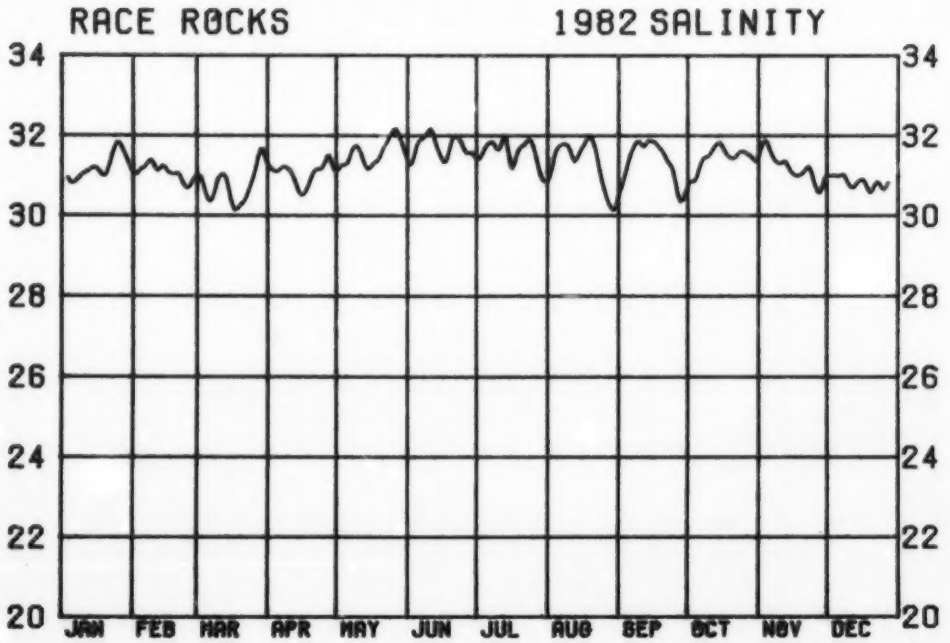

℃ CAPE BEALE
1982 TEMPERATURE ℉
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

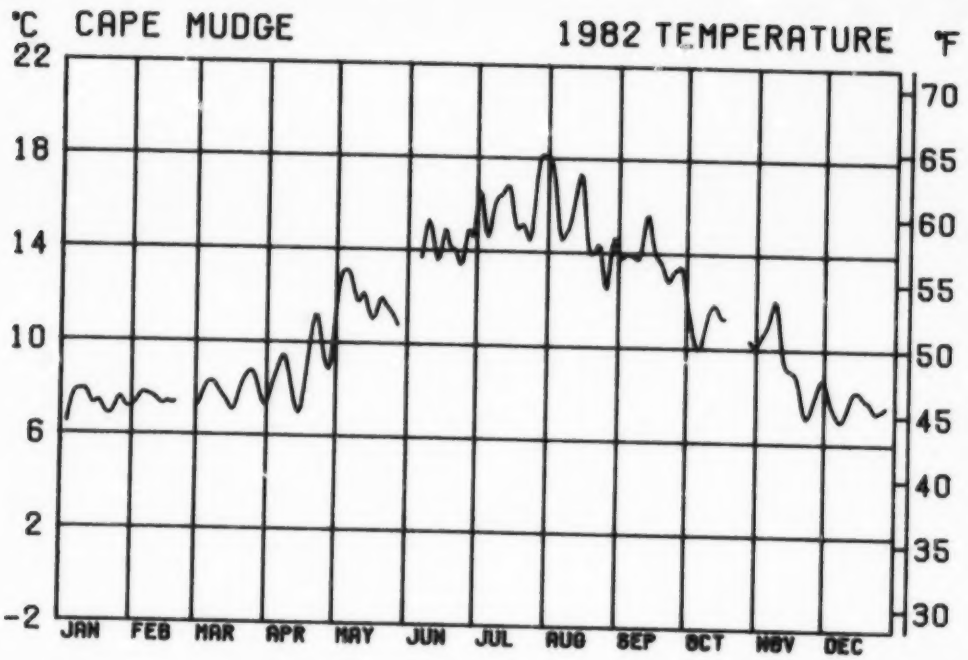

CAPE BEALE
1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

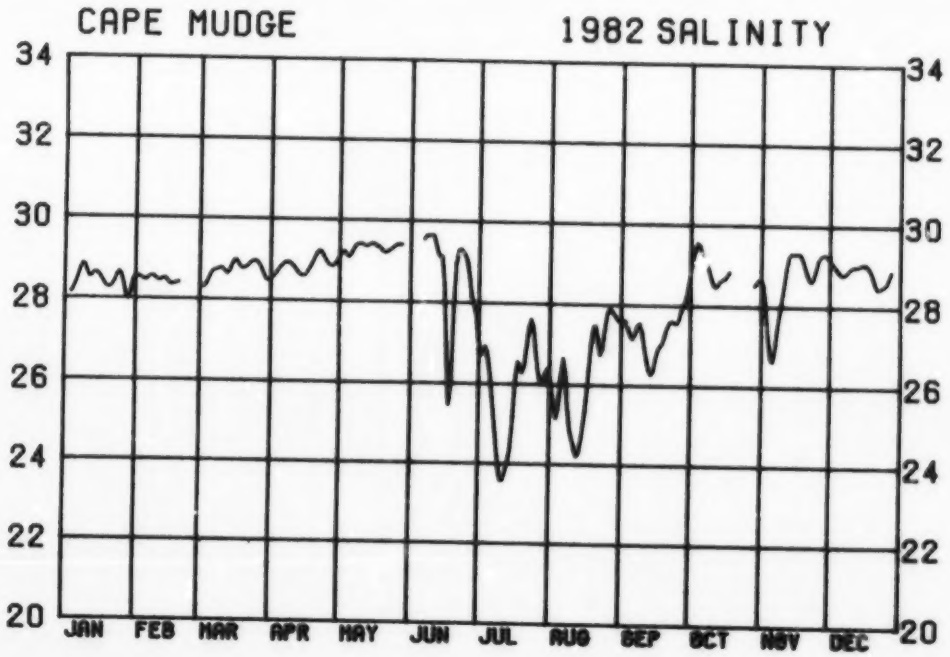

°C SHERINGHAM POINT 1982 TEMPERATURE °F
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

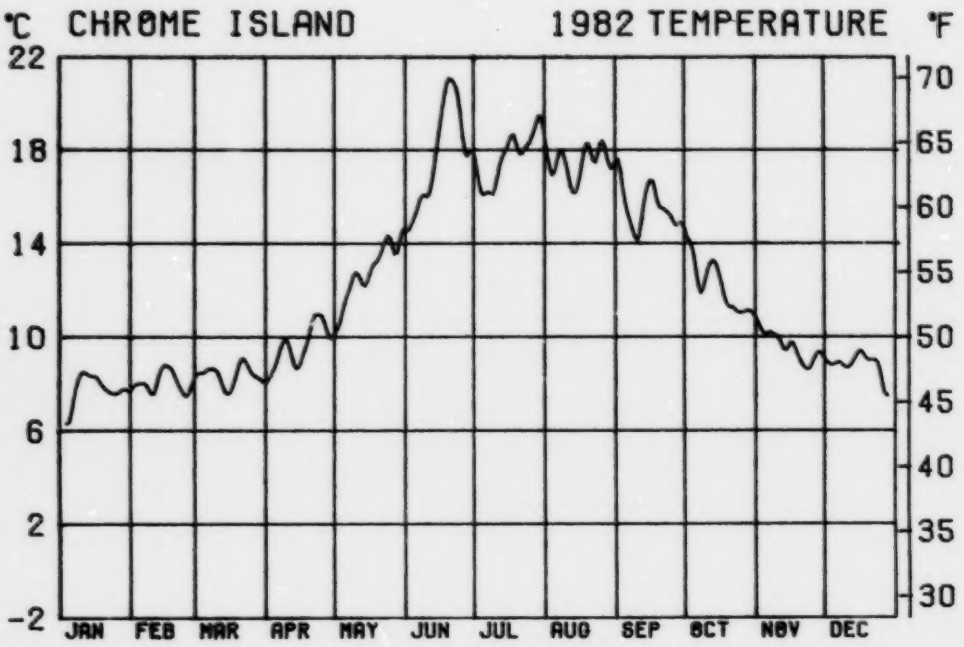

SHERINGHAM POINT 1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

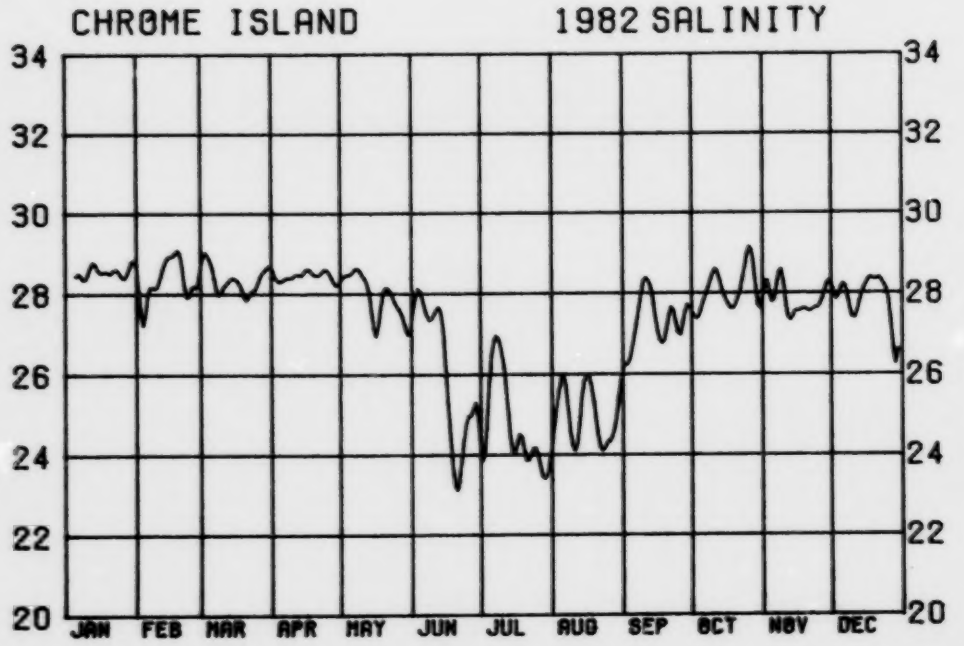

°C RACE ROCKS 1982 TEMPERATURE °F
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

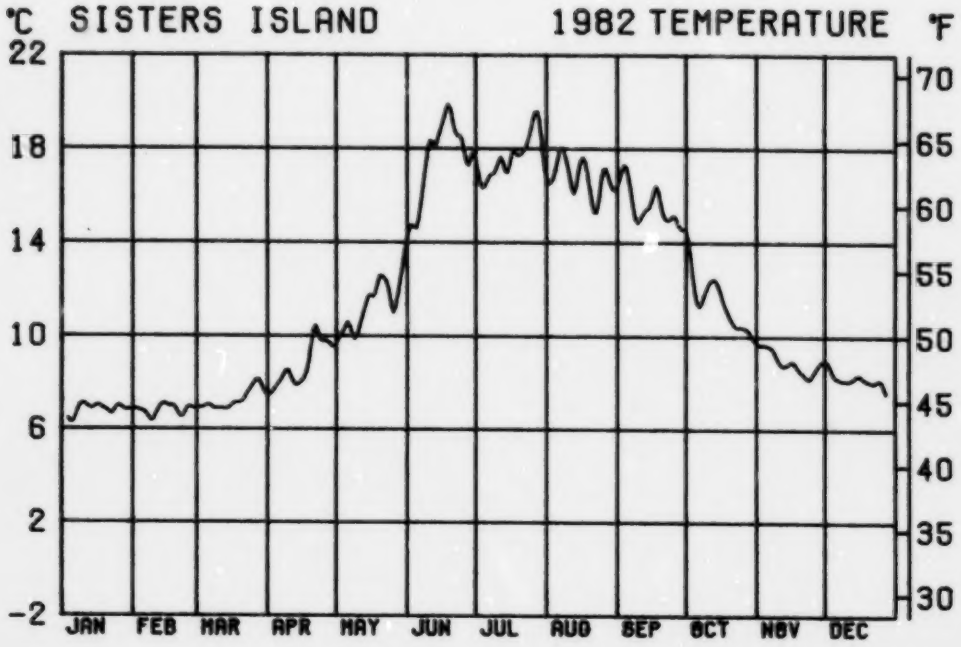

RACE ROCKS 1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

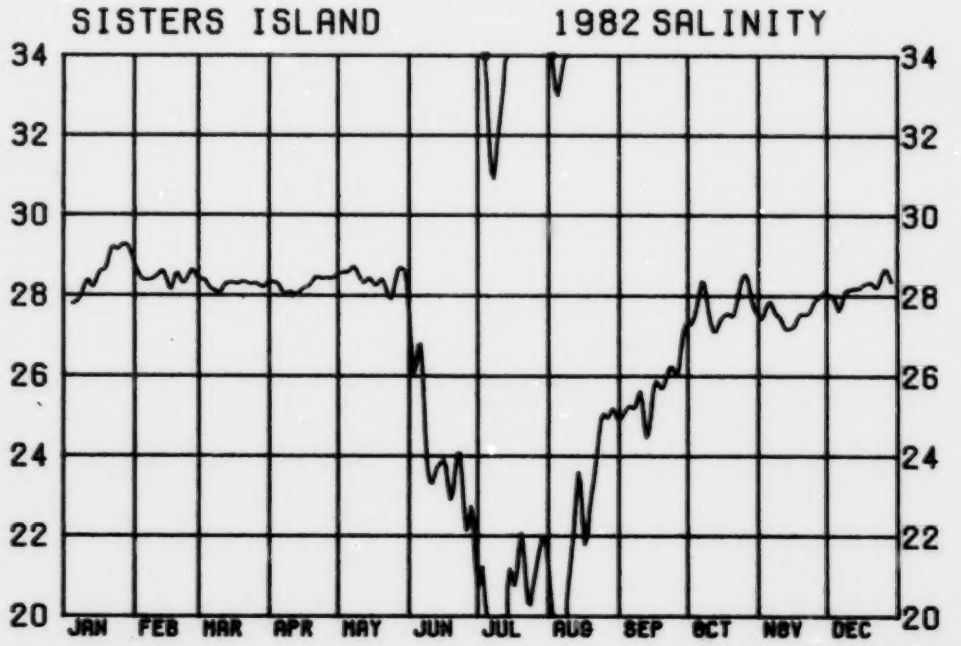

°C CAPE MUDGE
1982 TEMPERATURE °F
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

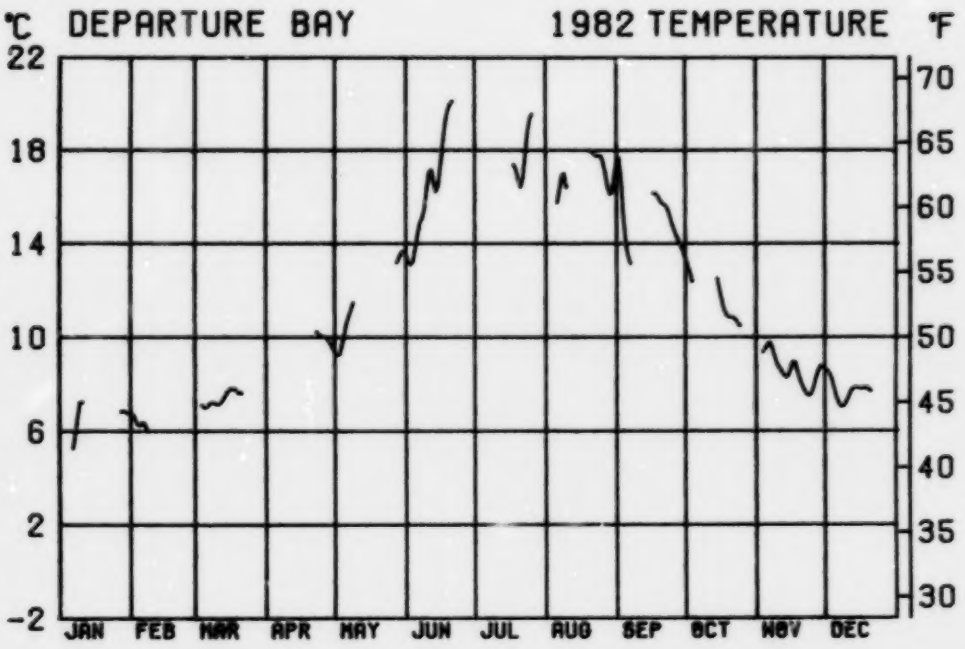

CAPE MUDGE
1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

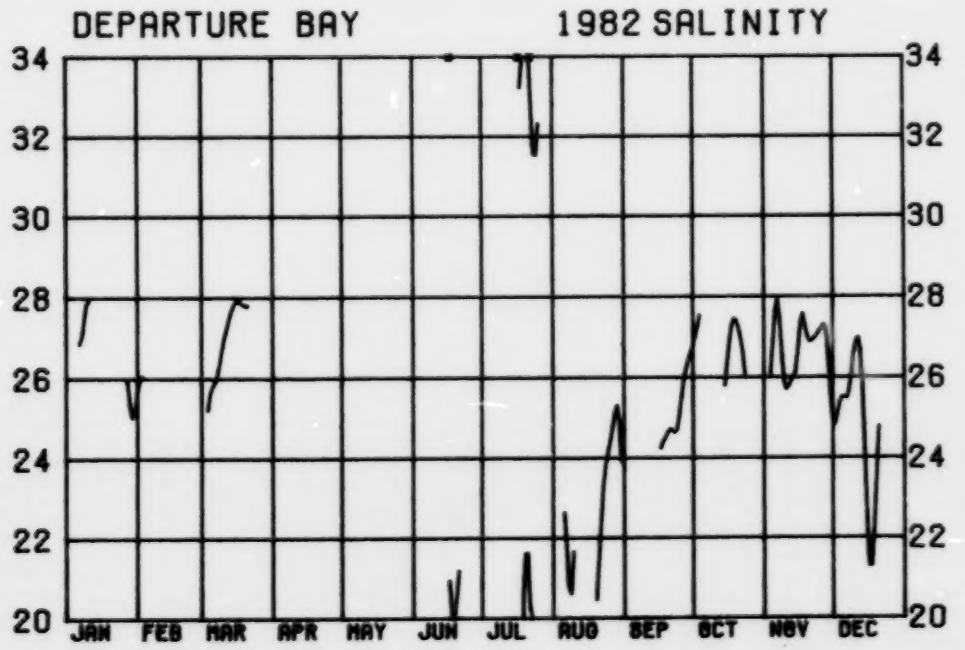

°C CHROME ISLAND 1982 TEMPERATURE °F
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

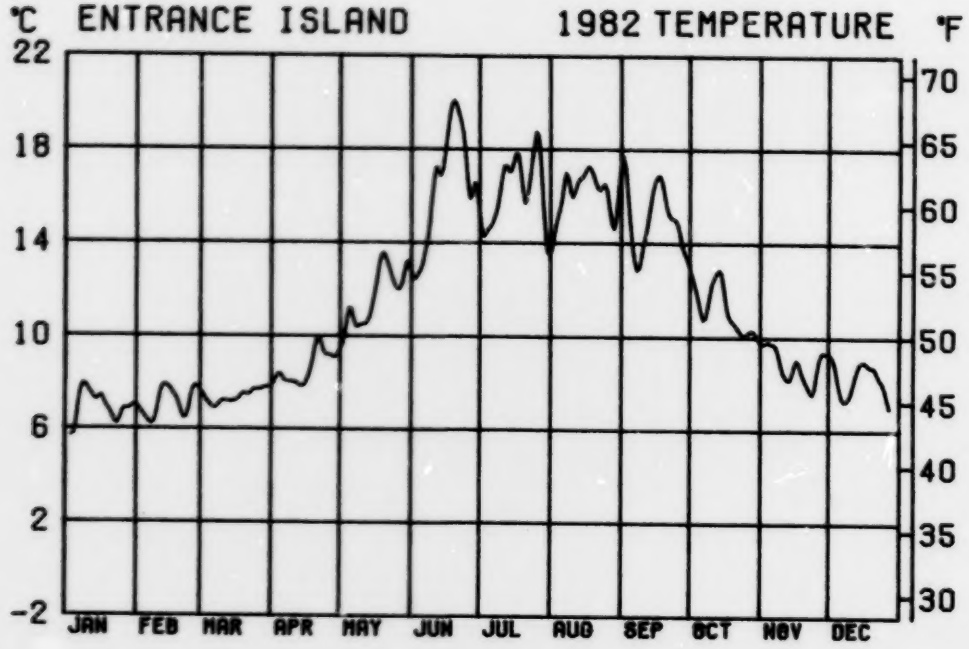

CHROME ISLAND 1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

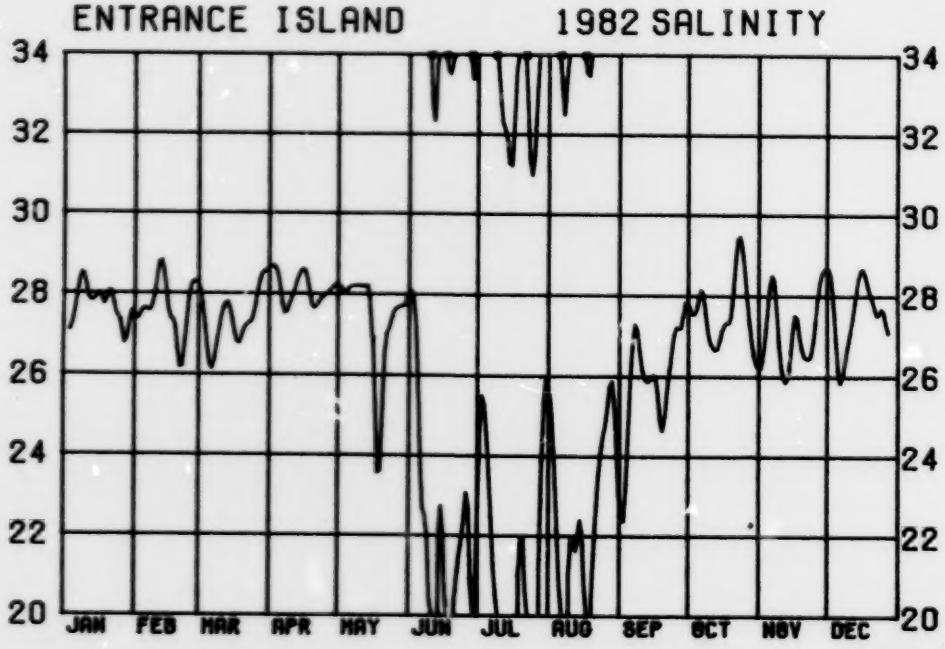

°C SISTERS ISLAND 1982 TEMPERATURE °F
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

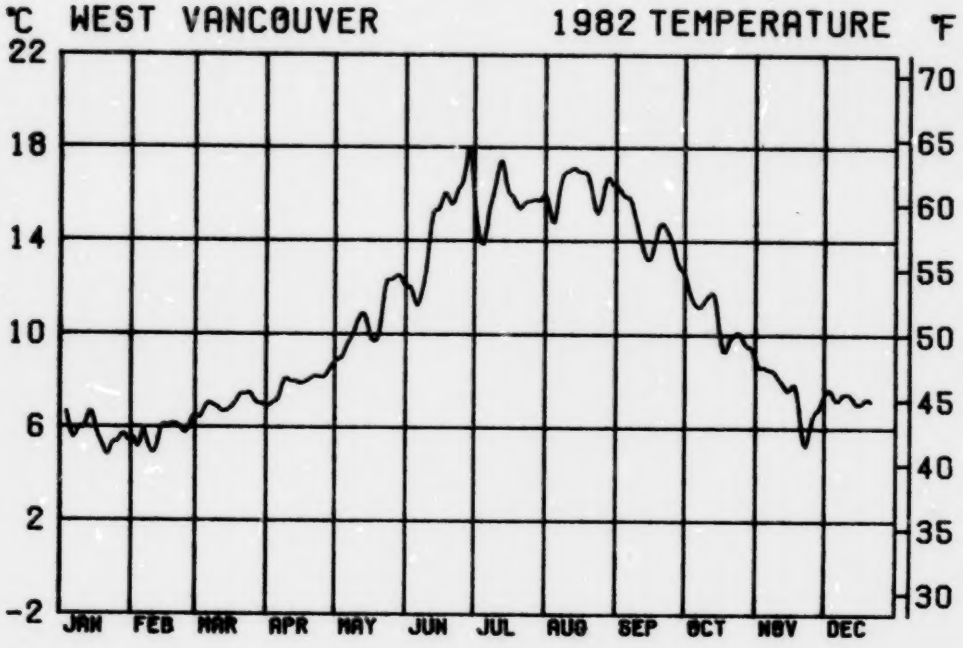

SISTERS ISLAND 1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

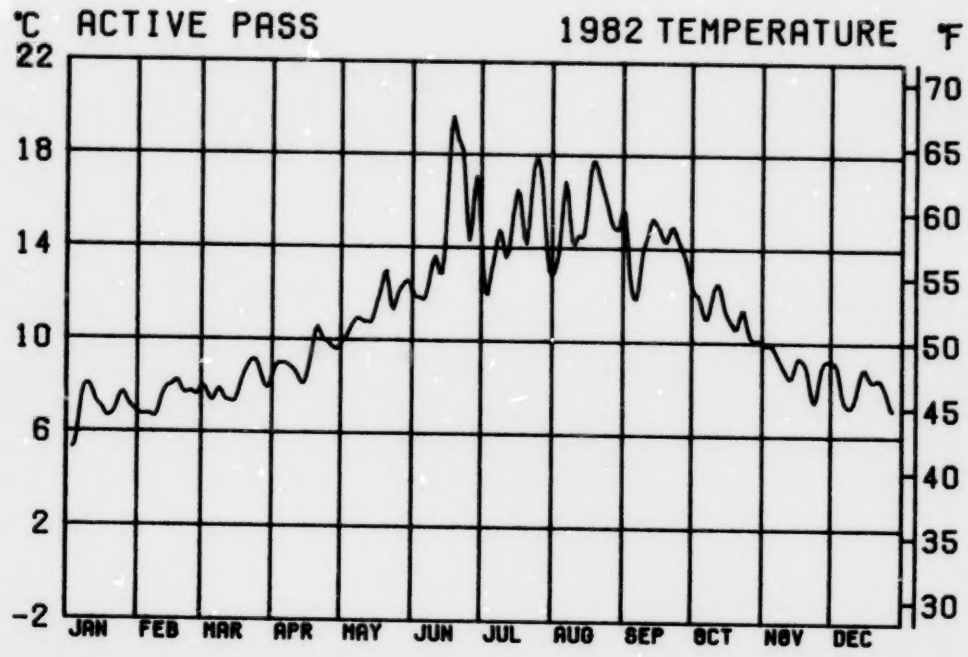

°C DEPARTURE BAY 1982 TEMPERATURE °F
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

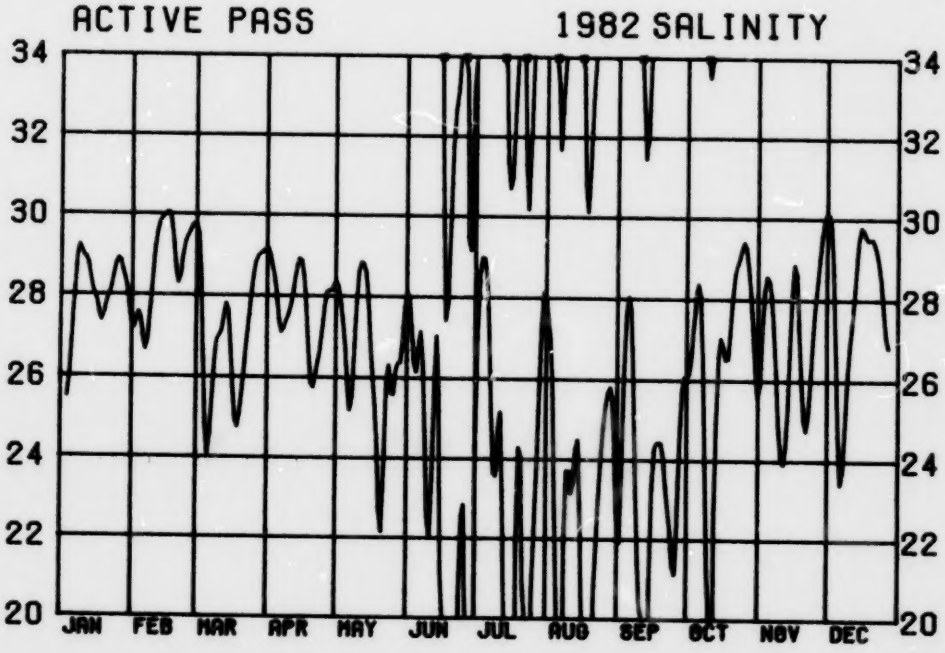

DEPARTURE BAY 1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC


°C ENTRANCE ISLAND 1982 TEMPERATURE °F
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC


ENTRANCE ISLAND 1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC


℃ WEST VANCOUVER 1982 TEMPERATURE ℉
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC


°C ACTIVE PASS
1982 TEMPERATURE °F
22
18
14
10
6
2
-2
70
65
60
55
50
45
40
35
30
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC


ACTIVE PASS
1982 SALINITY
34
32
30
28
26
24
22
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

POOR

QUALITY

ORIGINAL